

GEODETIC AND TOPOGRAPHIC SURVEY OF COLUMBUS, OHIO.

TD 25 C72 A5

STX

LIBRARY
OHIO STATE UNIVERSITY

REPORT OF THE GEODETIC AND
TOPOGRAPHIC SURVEY
OF
COLUMBUS, OHIO



DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

R. H. SIMPSON, *Chief Engineer*
R. C. CHANEY, *Engineer Planning Commission*

R. H. RANDALL, *Engineer of Survey*

1927

REPORT OF THE GEODETIC AND
TOPOGRAPHIC SURVEY
OF
COLUMBUS, OHIO



OHIO STATE
UNIVERSITY

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

R. H. SIMPSON, *Chief Engineer*
R. C. CHANEY, *Engineer Planning Commission*

R. H. RANDALL, *Engineer of Survey*

1927

TD 25

C72A5

STAT 010

V1021110

CONTENTS

PART I.

Introduction

Schedule

Organization

Geodetic Survey

Triangulation

Precise Traverse

Primary Traverse

Precise Levels

Topographic Survey

Summary

APPENDIX

Specifications

Use of Standard of Length

PART II.

Explanation of Tables

Tabulation of Results of Geodetic Survey

List of Descriptions of Stations and Bench Marks

Index for Part II.

ILLUSTRATIONS, CHARTS AND MAPS

CITY OF COLUMBUS, OHIO
CITY PLANNING COMMISSION

25 City Hall

August 26, 1927.

Mr. R. H. Simpson, Chief Engineer,
Dear Sir:

In transmitting to you herewith the report upon the Geodetic and Topographic Survey of Columbus, I wish not only to testify to its excellent character as such, but also to urge its continuance. The need for adequate mapping of various areas has been felt in this office frequently in the past, and has led to local or job surveys of unrelated character and temporary value. Such mapping is uneconomical and of varying degrees of completeness and accuracy. Further, the detailing of men engaged upon routine work to situation surveys of this sort not only results in interrupting and disorganizing current work but necessitates delay in planning.

Particularly needed is the topography of the area in process of improvement, and of the outlying areas. The river and creeks within the county limits, with their bordering areas, should also be mapped.

The completion of mapping for a distance of about three miles outside the corporate limits of the city is urgently needed by the office of the Planning Commission in the matter of the review of plats as well as in the work which the office should be engaged upon in studies of city planning nature.

Obviously, mapping done for any purpose, whether sewerage or other specific improvement or city planning, will become available for other purposes and will form a part of the ultimately completed map.

Yours very truly,

R. C. CHANEY, Engineer,
City Planning Commission.

Mr. H. H. Simpson, Chief Engineer,
Mr. R. C. Chaney, Engineer in Charge,
Division of Engineering and Construction,
City of Columbus, Ohio.

Gentlemen:

I transmit herewith a report upon the Geodetic and Topographic Survey of Columbus. The survey as reported is completed in the sense that the precise control is established and available for use in mapping any local area as needed, and the report presents in permanent form the data for future use.

The mapping is not completed but the geodetic control of the entire area makes possible the filling in of the picture in a correlated manner as the topography of any section becomes necessary for any planning need. This obviates the accumulation of separate, unrelated, or frag-

mentary mapping, and any local surveys may and should become a part of the mapped area.

The cost of the work done is shown in the following statement, with the appropriations from which the survey has been funded:

Geodetic Survey

Triangulation, (excepting installation of monuments and stations)	\$ 1,790.00
Precise Traverse, 79.7 miles.....	8,646.00
Precise Levels, 112.0 miles, (excepting installation of monuments)	2,665.00

TOTAL COST OF PRECISE CONTROL.....\$13,101.00

Precise horizontal control covers an area of 60 square miles.

Precise vertical control covers an area of 80 square miles.

HORIZONTAL CONTROL, Cost per square mile.....	\$ 174.00
Cost per acre.....	0.27

VERTICAL CONTROL, Cost per square mile.....	33.00
Cost per acre.....	0.05

Topographic Survey

Primary Traverse, 11.0 miles.....	\$ 744.00
Topographic Mapping, field work.....	5,353.31
Publishing Topographic Map Sheets.....	2,591.36

TOTAL COST OF TOPOGRAPHIC SURVEY.....\$ 8,688.67

(Includes 0.36 square miles of unpublished mapping)

Completed field mapping covers an area of 5.59 square miles, or 7½ map sheets.

Cost per published sheet of 0.72 square miles.....	\$ 1,155.50
Cost of published map, per square mile	1,604.90
Cost of published map, per acre	2.51
Cost of field mapping only, per sheet.....	785.30
Cost of field mapping, per square mile	1,090.70
Cost of field mapping, per acre	1.70

Survey Appropriations

April 20, 1925.....	\$ 2,950.00
March 22, 1926.....	9,500.00
November 1, 1926.....	2,000.00
January 1, 1927.....	10,000.00

TOTAL APPROPRIATED

Expended to August 15, 1927.....

Balance, August 15, 1927.....\$ 2,660.33

The unexpended balance on August 15, 1927, will be devoted to completing the program for the year, bringing the mapped area up to nine and a fraction sheets, or 6.67 square miles, or 4269 acres.

It is recommended that further appropriations be used in continuing the mapping in such locations as are indicated as needed.

Primary levels, expanding the precise level net for greater frequency of points for more convenient use by the city and other surveys, are being executed by city forces and to date the field work is completed for that portion of the city area lying south of Broad Street. This work, being based upon the precise control net, is subjected to that control and illustrates the value of the comprehensive Precise Control Survey. When this work is completed the results will be issued as a supplement to this report.

I wish to call particular attention to the manner in which the Survey has been organized to complete a comprehensive control adapted to mapping separate or non-continuous areas as needed.

It is, of course, apparent that the realization of the benefits to be derived from the Survey requires a continuation of mapping work. City planning work of all kinds, as well as public needs, make urgent the prosecution of the mapping of the outer and incompletely developed area.

Respectfully submitted,

R. H. RANDALL,

Consulting Engineer.

PART I.

INTRODUCTION

The City of Columbus, through its Division of Engineering of the Department of Public Service, has undertaken a city survey of a most precise and fundamental character. One main division of this, called the Geodetic Survey, has been completed throughout the present built-up or developed area of the city, and work upon the remaining, or Topographic, Survey is progressing rapidly. It is the purpose of this present report to give in full all of the engineering data secured by the Geodetic Survey, and to describe the progress made to date upon the Topographic Survey. In order that the results of the survey as a whole may be of maximum benefit, an account of all methods and processes used is given. Before proceeding with this, however, it seems proper to consider briefly the nature of the survey, and why it was undertaken at this time.

The business of the modern city falls readily into two classifications, the operation of existing facilities and planning for future needs by the extension of these as the community's growth and development shall require. Both of these functions, operation and planning, can only be properly performed with an adequate basis of information as to all relevant facts and conditions. Foremost among these are the facts concerning the land, its slope and characteristics, and the properties and improvements laid out upon it. Since land is the only thing a city has to build itself upon, an inventory of the physical facts concerning land and its occupation is of fundamental and prime importance.

It is the purpose of the city survey to provide this sort of inventory. Few communities begin their existence with adequate or sufficiently accurate survey information. Columbus' situation, therefore, previous to the commencement of the present survey, was not unusual. At the time of original settlement of most American cities, land was cheap and the methods of measuring it were crude. With the increase in land values, better surveys have been demanded. In the older cities of Europe, it has long been the custom to have complete and precise knowledge of the measurement of every street and block, of every individual lot, and of the topography of the entire region. Progressive cities here are equipping themselves with like information. Eventually all will have it, for it is simply too costly to attempt to transact public business without this fundamental basis of ordinary, essential facts. Sometimes this is secured by a slow, piecemeal process, through the years, and sometimes by the more business-like and much less expensive wholesale survey such as Columbus is making.

The need of a comprehensive survey of Columbus has been evident to the city's engineers and officials and to informed citizens for a period of years. The Division of Engineering has been advocating it, and the engineering faculty of Ohio State University has been strong in its support. Some mapping was done following the flood of 1913, but the real

beginning of the survey dates from 1925, when, because of the particular need of topographic maps for sewer design in some districts, and the general need of such information in all the newer portions of the metropolitan area for the control of subdivision and land development, the present survey was begun.

It has been stated that the city's business is, broadly, operation and planning. It might further be properly said that planning in its most profitable meaning can usually only be undertaken in the unbuilt or development areas immediately adjacent to and surrounding the present city. Here opportunity exists to plan the city of the future in accordance with the advantages offered by topography, drainage and other natural conditions. The planning that is usually done in the built up areas is practically always remedial, and might best be called replanning. With this in mind, it is interesting to note the logical way in which the survey of Columbus was planned to meet this condition.

Cities grow by accretion, that is, by the addition of new allotments or subdivisions. The control of the design and development of subdivisions is very much the public's business. In accordance with the obvious need of such control to protect both community and individual interests, the National Association of Real Estate Boards and the National Conference on City Planning have recently passed joint resolutions recommending that planning commissions everywhere be charged with the design of subdivisions, and that this control of design be based in all cases upon a broad general plan of street layout. Such a plan is a provision for the physical framework of the city-to-be, and, once properly arrived at, will automatically provide for most of the requirements of city planning as now practiced. For its preparation it is obvious that full information as to land characteristics and occupation, or topography, is essential. Columbus has anticipated this general movement toward practical planning by public authorities, and is rapidly becoming equipped with the basic engineering map data to make such planning easy and economical.

In considering the schedule of the Columbus survey, it was recognized that first attention could most properly be directed toward preparation for city planning in the outlying or development areas. Accordingly the central portion of the city, where opportunity for constructive original planning is relatively small, was provided with only a bare minimum of survey information. Only enough work was done to insure coordination of the points that were to be established around the perimeter of the present city, as will be seen by an inspection of the triangulation chart. Thus, in the shortest possible time and with a minimum of expense, a maximum amount of effective results, available for use as the basis for topographic mapping and for the tying-in of corners and boundary lines of new subdivisions, was secured.

In practice the Geodetic and Topographic Survey will be used by city departments and by private individuals and corporations as the basis for planning and constructing all general and specific improvement projects. The Geodetic Survey will serve as the permanent foundation and means of coordination for all future engineering survey work, in addition to its immediate function as the framework upon which the topographic maps are being constructed. Subdivisions will be required to coordinate their property corner monuments with the precisely located

and monumented points of this survey, so that the final result will be the building up of an accurate and complete property map in what are now the newer portions of the city; and this will be done at no cost to the public beyond the establishment of the monuments furnished by the Geodetic Survey. The maps of the Topographic Survey will be used to lay out streets, to establish their grades, to plan and construct sewer and water systems, parks, boulevards and all other improvements. The use of these maps will obviate almost entirely the necessity of making preliminary surveys; for the exact location of, for instance, proposed streets, and the amounts of excavation necessary to build them, can readily and accurately be determined from them. By the use of the Geodetic Survey data all of the future engineering surveys of the district can be controlled and utilized progressively, building up a lasting basis of property and other engineering information of an accuracy sufficient for all time and which it has not been possible to accumulate without this correlating agency. Upon the maps of the Topographic Survey the community's planning may proceed upon a sure knowledge of all the facts.

SCHEDULE

In planning the Columbus survey, careful consideration was given to the question of the community's ultimate survey needs. This resulted in a program, or schedule. This schedule is believed to be not only proper for Columbus, but, since conditions in others of our cities of corresponding size are quite generally similar, it is felt that it is applicable generally. It conforms to and is representative of practice upon comparable surveys throughout the country.

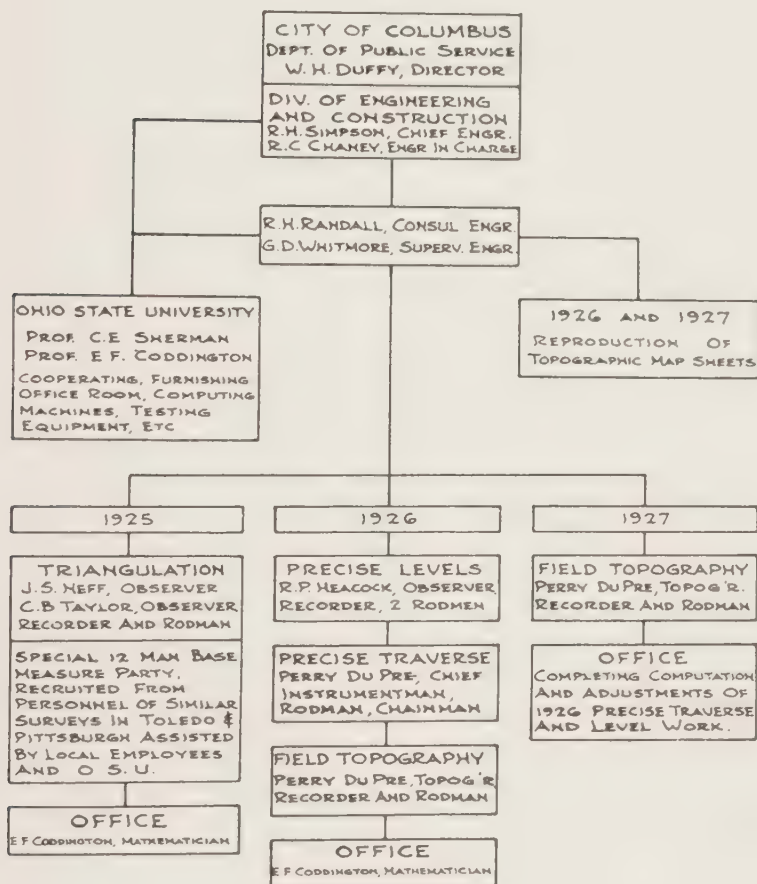
Geodetic Survey

1. Precise triangulation over the incorporated area, with special reference to location of stations in the outlying, partially developed sections. The accuracy of the triangulation to be such that the probable error of any distance would not exceed one part in 50,000, or about one inch per mile.
2. Precise traverse, amplifying and making usable the results of the triangulation. The stations of the traverse should be well monumented and referenced. The traverse should have an accuracy represented by a limiting closing error of one part in 30,000.
3. Primary traverse, of a lower order of accuracy than the precise traverse, and therefore less costly, but sufficiently accurate to serve as control surveys for tying in and coordinating the property markers of streets and subdivisions. The stations of the primary traverse should be well monumented and referenced. The accuracy should be represented by a closing error of one part in 15,000. This grade of traverse should be run from year to year as needed, in advance of the topographic mapping program.
4. Precise levels, with elevations established upon bench mark monuments and precise traverse monuments.

Topographic Survey

5. Topographic map of areas as needed, published upon a scale of one inch equals 200 feet, general preference being given to the outlying and partially developed sections.
6. Continuation of the property-dimension map of the city, upon a scale of one inch equals 60 feet, conforming to the control furnished by the Geodetic Survey.

ORGANIZATION CHART GEODETIC AND TOPOGRAPHIC SURVEY COLUMBUS OHIO 1925 TO 1927



ORGANIZATION

The organization chart shows graphically the arrangement of the personnel. The party chiefs and instrument men have been supplied from the writer's organization, while employees of the grade of rodmen and chainmen have been employed locally. The supervising engineer spends a few days each month in Columbus, personally supervising and inspecting all work, and acting as advisor to the city in matters pertaining to the survey.

The organization used has been flexible, according to the demands imposed by the different phases of the survey, and has varied from two to twelve men. Local men have been employed to the greatest possible extent, and cooperation with the city, county, and university engineering departments in arranging the survey forces has resulted in securing data beneficial to all at no increase in survey costs.

TRIANGULATION

Description. Triangulation is the foundation of the horizontal survey system. It is basically a series of overlapping triangles. All of the angles of these triangles are accurately measured, and at proper intervals a triangle side is also measured. From this side length, measured upon the ground and known as a baseline, lengths for the air lines, which constitute all other triangle sides, are computed by trigonometric rules. On account of the overlapping of the triangles, certain geometrical figures are formed, which, with the triangles themselves, are subject to rigid geometrical laws, making this form of survey capable of great accuracy in adjustment and computation and in the consequent quality of final results.

Azimuth and Coordinates. The Columbus triangulation is oriented upon a true azimuth basis. An astronomic bearing was observed over the line State-to-Medary, carried through the triangulation angles, with allowance for convergence of meridians, to the U. S. Geological Survey line Columbus-to-Asylum, with a resulting discrepancy of 0.7 second of arc. This check proved the accuracy of the observed bearing, which was then transferred to Station Bank, with correction due to convergence of meridians applied, so that all bearings, or azimuths, emanating from this station are assumed to be true.

Station Bank was also chosen as the theoretical origin of rectangular coordinates, with a value of 100,000 feet north and 100,000 feet east, thus making all coordinates with the city's ultimate area of plus values.

Since the reference, or true, meridian passes through the origin of rectangular coordinates at Bank, it is a simple matter to compute the true bearing at any other point in the city, by applying the small correction due to convergence of meridians. The longitude distance necessary for this computation is obtained by subtracting the east coordinate of the point in question from 100,000. The latitude may be taken as $40^{\circ}-00'$, this value being practically a mean latitude for Columbus and sufficiently accurate for all except precise computations.

In order to determine the actual base-to-base discrepancy in the triangulation, it was necessary to equate the measured base lines to a common elevation, or datum. For the rectangular coordinate system this datum has been taken as 800 feet above sea level, or approximately the mean elevation of Columbus and vicinity. For the geographic coordinate system the datum is mean sea level.

Accuracy. The limiting values in the specifications covering triangulation were of such exactness as would insure an order of accuracy sufficient for years to come. They were adopted after a thorough study of results obtained in various other cities, and are in substantial agreement with what are now considered standards for such work. It is gratifying to report that the actual results are considerably better than those specified, and that this has been accomplished at no increase in costs. The following tabulation shows the specified and the actual results:

EXPLANATORY DATA

DEPARTMENT OF PUBLIC SERVICE

COLUMBUS AND ENVIRONS



	SPECIFIED		ACTUAL	
	Average	Maximum	Average	Maximum

<i>Field Work</i>				
R _i , or strength of figures between bases in units of sixth place of logarithms.....		50		31.4
Probable error of baseline measurement, one part in.....		400,000	730,000	700,000
Triangle closure, in seconds of arc	2."0	5."0	1."36	3."9
<i>Final Results</i>				
Base-to-base discrepancy, one part in	50,000	30,000		1:700,000
Corrections to a direction, in seconds of arc.....	1."5		0."57	
Probable error of an observed direction in seconds of arc.....	1."5		0."75	
Probable error of observed azimuth, in seconds	Not Specified			0."6

Field Work and Equipment. Locations of stations and baselines were based upon a thorough field reconnaissance. This reconnaissance was made graphically by the plane table method, all possible sights between prospective station locations being drawn upon the sheet as the stations were visited. After rejecting those sights which were not essential to the scheme, or were undesirable because of probable smoke interference or horizontal refraction, the strength of figures was computed. Of the twelve main stations finally adopted, eleven are upon the roofs of substantial buildings, thus gaining the elevation of instrument necessary for clear sights without the expense of building towers.

The two baselines were located on railroad rights-of-way, in strong positions with reference to the triangulation scheme. Three additional ground stations with monuments were necessary to markk the baseline terminals.

The reconnaissance further provided for two or three ground monuments at each air station, for the purpose of transferring the inaccessible air stations to these ground stations for convenient use later in connecting the precise traverse to the triangulation.

Observation of triangulation angles was effected by a two-man party, observer and recorder, using a repeating theodolite with sunshade and windshield for protection of the instrument. The instrumental program consisted in measuring each angle of each triangle from 48 to 60 times (depending upon agreement of results), or 4 or 5 sets of 12 repetitions per set.

The signals used as sights in observing upon distant stations consisted of large canvas-and-wood targets, painted red and white for easy indention. On account of protracted hazy weather during the fall of 1925, however, it was sometimes necessary to use automobile searchlights as signals. These were of the focusing type, mounted in special brackets for aiming the beam toward the instrument stations.

Baseline measurement was accomplished by a ten-man party, working at night to secure the advantage of even temperature and consequent greater stability in the tape lengths. The equipment used consisted of four steel base-tapes, 50 meters in length, tested for length and coefficient of expansion by the U. S. Bureau of Standards, special thermometers for measuring tape temperature, calibrated spring balances for applying tension to the tape, portable tape supports for tape contacts, level and level rod for determining elevations of ends of tape, tape stretching devices, transit for alignment, etc. The Eastern Base was measured 4 times and the Western Base received 7 measurements, one of which proved faulty and was later rejected.

The angular work of the ground transfers was done by the regular observing party. The method of transferring the roof stations to the ground monuments utilized one or two small triangles, each triangle having all angles measured, and one or more side lengths measured, affording in every case at least one trigonometric condition. The small transfer triangle was then oriented with the main scheme through a connecting angle. This connecting angle, the most important of the transfer work, is also the most difficult to obtain with precision, because of the change in focus of the telescope in turning from the long air line to the comparatively short transfer line, and the steep inclination of the transfer sights.

The observation for astronomic azimuths was taken on Station State. (Ohio State University). This was effected by the regular observing party, augmented by a timekeeper. For purpose of increased accuracy of results, the observations extended over three different nights, with 6 separate repetition sets. The incidental equipment included a sidereal chronometer, loaned by Ohio State University, and used to note the exact time of pointing the star.

Office Work. The first step in the computation was the testing of the triangles for angular closure, determining the discrepancy between 180 degrees and the sum of the three measured angles of each triangle. In cases where the first measures of an angle failed to close the triangle within an acceptable limit, the field party returned and remeasured the angles until a satisfactory closure was obtained. The triangle closure is the first and principal index of the accuracy of the work.

Bases were computed immediately after measurement, in order to test the accuracy attained. The various corrections applied to the field measures were for inclination, temperature, absolute length (pull and sag), and reduction to the sea-level and to the 800-foot datum planes.

After the triangles had been satisfactorily closed and base lengths computed, the next step was the least squares adjustment. The object of this adjustment was to remove all angular discrepancies in the triangles; to make the sines of the angles proportional to the opposite sides in each triangle; to insure that each triangle side would check for length, from whatever base it was computed; and to make the sum of the squares of the corrections a minimum. This latter requirement is based upon the theory of least squares—that is, that the most probable values from any set of observations are those values which will make the sum of the squares of the residuals a minimum.

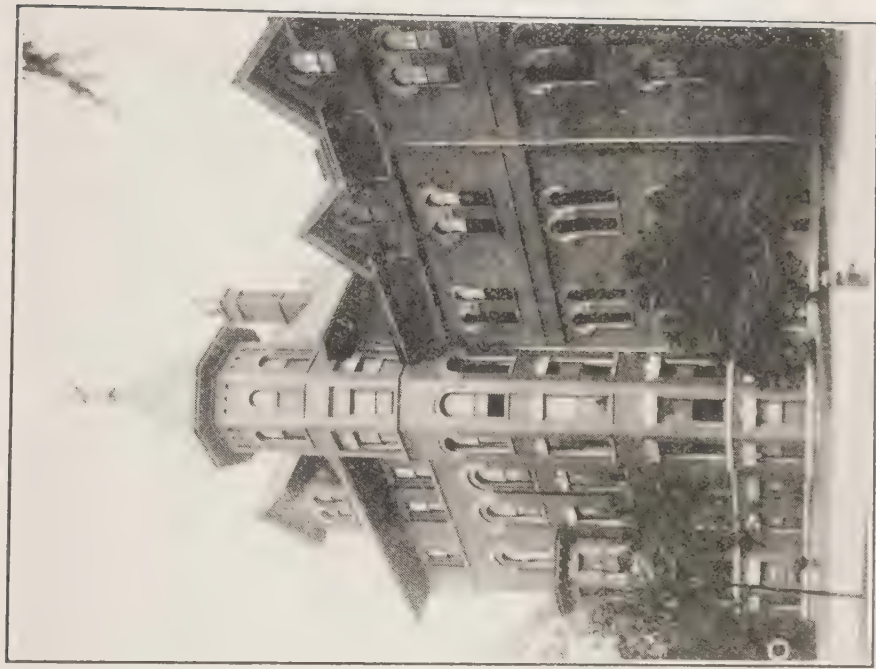
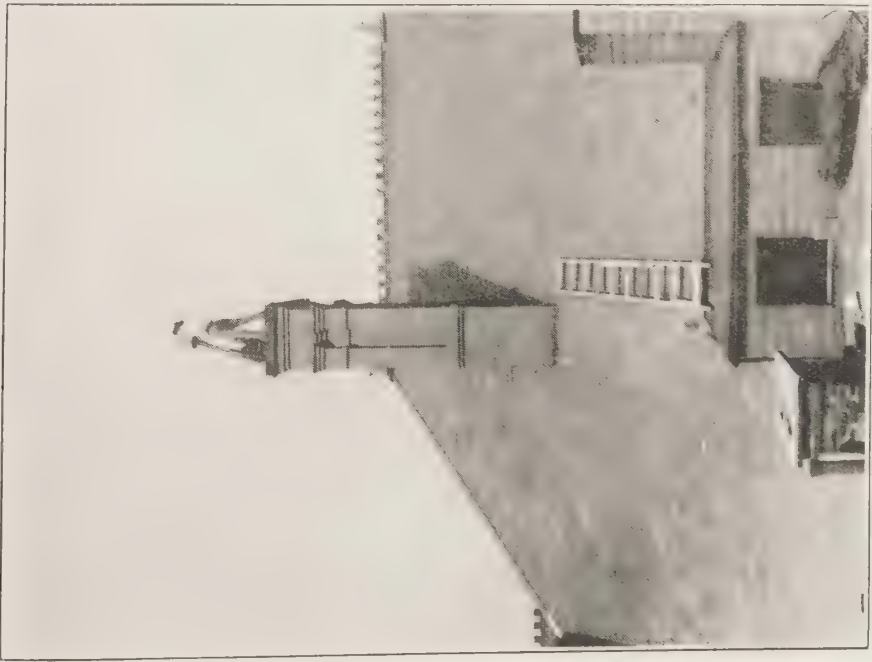


BASE LINE MEASUREMENTS

In the Columbus scheme there are 19 triangles, with 26 triangle sides, each triangle side receiving two corrections, one at either end. The overlapping of the triangles created 20 geometrical conditions which were to be rigidly satisfied by the adjustment, in addition to the condition that the length discrepancy between bases be distributed. These 21 conditions were stated in the form of condition equations, having 52 unknown quantities, these latter being corrections to the triangle sides. These were then solved simultaneously by the least squares method. The corrections to the angles obtained by this adjustment were applied to the angles, with the result that all triangles closed exactly 180 degrees, all figures were of exact geometric proportions, and all lengths checked through from base to base. Rectangular coordinates and plane azimuths were then computed for all the stations and lines.

Summary. The field work of the triangulation was begun in July, 1925, completed in June, and final results made available in August, 1926. The scheme includes 12 main stations and 3 supplemental stations marking ends of ground bases. The average length of a triangle side is 12,899 feet (2.44 miles). The area actually within the net is about 30 square miles, but its effective controlling area may be said to be 50 square miles.

The work is of a high order of accuracy, and from this standpoint should be sufficient for all time. Future expansion into the outlying areas can be conveniently arranged without any revision of the present results.



TRIANGULATION OBSERVATION

PRECISE TRAVERSE

Description. Precise traverse may be logically considered a part of the triangulation system, as its purpose is simply to furnish additional monumented points along the streets, where they will be more available for every-day use than the widely scattered and oftentimes inaccessible triangulation stations. Such traverse is essentially a series of second- or third-class connected baselines, with the angles between these lines measured by triangulation methods. The coordinates of the traverse monuments are the actual bases for map work and for departmental and private surveys.

Accuracy. The limiting accuracy and frequency of location of precise traverse lines were designed to be such that the traverse would serve the ultimate purpose of fixing the positions (coordinates) of property corners, and of re-establishing these when lost or obliterated. Accordingly, a limit of error in measured distances was set, the greatest allowed discrepancy being 1 part in 20,000 (about 1 foot in four miles) and the average permissible being 1 in 35,000 (1 foot in about 7 miles). Since the value of real property varies widely within the territory covered by the survey, it is obviously necessary to provide more precise traverse positions, through the more frequent spacing of traverse lines, in the higher priced, more fully developed sections, than in those of lower value. In the latter a minimum of precise lines are established and these are supplemented by traverses of lower accuracy (primary traverses) until such time as the increase in land values justifies the running of additional precise lines.

Field Work and Equipment. The field work was begun with a thorough field reconnaissance, selecting routes for lines affording the best working conditions consistent with other requirements, selecting monument locations, and utilizing all possible existing monuments. This was followed by the monument setting party, which established the concrete and bronze monuments and set the iron pins, used as intermediate stations connecting the monuments.

Angular measurements and distance taping were effected by one party of five men. The instrument used was the regular triangulation theodolite, but each angle received one set of 12 repetitions instead of the 4 or 5 sets necessary on triangulation angles. Other angular-measurement equipment included specially designed range poles, plumbed by means of circular bubbles and held stationary by means of iron tripods.

The traverse taping was executed in a manner similar to baseline work except that each course was measured only once, and some of the refinements of basework were omitted. One-hundred-foot steel tapes were used, these being calibrated at frequent intervals upon the Columbus Standard of Length. Spring balances gave correct tension to the tapes, thermometers indicated tape temperatures, and the theodolite was converted to use as a level in determining the gradient of the tape.

Office Work. The office computations included reduction of all distances to horizontal, with the other corrections applied similar to those described under baseline computations, testing of all circuits for angular

discrepancies and adjustment of those discrepancies by the method of least squares, computation of latitudes and departures with tests and adjustment of closures, and final listing of coordinate positions of each traverse station. All computations are listed upon printed form sheets, and are arranged in logical order so that there should be no difficulty in following through any of the various steps.



Probably the most important phase of the office work is the adjustment, or distribution of angular and distance discrepancies. As stated above, the angular adjustment and distance adjustment were considered separately, although the same general plan was used for each of these adjustments. An inspection of the Traverse Accuracy Chart shows a logical dividing line along Fifth Avenue, separating the traverse net into two main parts, northern and southern. For adjustment purposes this division becomes more logical when the shape of the traverse layout is considered. The northern half is composed of connected loops attached to the triangulation system at frequent intervals, while the southern half is made up largely of individual lines running between triangulation stations but not supported by connected loops.

In the northern part of the traverse system the scheme of adjustment utilized the method of least squares, with equations expressing the conditions that all circuits should close exactly and also that the traverse values should agree with the controlling triangulation value. The unknown quantities in these equations were the total corrections to the sides of the circuits, these total corrections being later distributed among the stations and courses of the sides in proportion to the number of stations in the angular adjustment, and proportionately to the distance in the distance adjustment.

INTELLIGIBILITÀ PERMANENTE

1974 - 1975

1976 - 1977

1978 - 1979

1980 - 1981

1982 - 1983

1984 - 1985

1986 - 1987

1988 - 1989

1990 - 1991

1992 - 1993

1994 - 1995

1996 - 1997

1998 - 1999

2000 - 2001

2002 - 2003

2004 - 2005

2006 - 2007

2008 - 2009

2010 - 2011

2012 - 2013

2014 - 2015

2016 - 2017

2018 - 2019

2020 - 2021

2022 - 2023

2024 - 2025

2026 - 2027

2028 - 2029

2030 - 2031

2032 - 2033

2034 - 2035

2036 - 2037

2038 - 2039

2040 - 2041

2042 - 2043

2044 - 2045

2046 - 2047

2048 - 2049

2050 - 2051

2052 - 2053

2054 - 2055

2056 - 2057

2058 - 2059

2060 - 2061

2062 - 2063

2064 - 2065

2066 - 2067

2068 - 2069

2070 - 2071

2072 - 2073

2074 - 2075

2076 - 2077

2078 - 2079

2080 - 2081

2082 - 2083

2084 - 2085

2086 - 2087

2088 - 2089

2090 - 2091

2092 - 2093

2094 - 2095

2096 - 2097

2098 - 2099

2100 - 2101

2102 - 2103

2104 - 2105

2106 - 2107

2108 - 2109

2110 - 2111

2112 - 2113

2114 - 2115

2116 - 2117

2118 - 2119

2120 - 2121

2122 - 2123

2124 - 2125

2126 - 2127

2128 - 2129

2130 - 2131

2132 - 2133

2134 - 2135

2136 - 2137

2138 - 2139

2140 - 2141

2142 - 2143

2144 - 2145

2146 - 2147

2148 - 2149

2150 - 2151

2152 - 2153

2154 - 2155

2156 - 2157

2158 - 2159

2160 - 2161

2162 - 2163

2164 - 2165

2166 - 2167

2168 - 2169

2170 - 2171

2172 - 2173

2174 - 2175

2176 - 2177

2178 - 2179

2180 - 2181

2182 - 2183

2184 - 2185

2186 - 2187

2188 - 2189

2190 - 2191

2192 - 2193

2194 - 2195

2196 - 2197

2198 - 2199

2200 - 2201

2202 - 2203

2204 - 2205

2206 - 2207

2208 - 2209

2210 - 2211

2212 - 2213

2214 - 2215

2216 - 2217

2218 - 2219

2220 - 2221

2222 - 2223

2224 - 2225

2226 - 2227

2228 - 2229

2230 - 2231

2232 - 2233

2234 - 2235

2236 - 2237

2238 - 2239

2240 - 2241

2242 - 2243

2244 - 2245

2246 - 2247

2248 - 2249

2250 - 2251

2252 - 2253

2254 - 2255

2256 - 2257

2258 - 2259

2260 - 2261

2262 - 2263

2264 - 2265

2266 - 2267

2268 - 2269

2270 - 2271

2272 - 2273

2274 - 2275

2276 - 2277

2278 - 2279

2280 - 2281

2282 - 2283

2284 - 2285

2286 - 2287

2288 - 2289

2290 - 2291

2292 - 2293

2294 - 2295

2296 - 2297

2298 - 2299

2300 - 2301

2302 - 2303

2304 - 2305

2306 - 2307

2308 - 2309

2310 - 2311

2312 - 2313

2314 - 2315

2316 - 2317

2318 - 2319

2320 - 2321

2322 - 2323

2324 - 2325

2326 - 2327

2328 - 2329

2330 - 2331

2332 - 2333

2334 - 2335

2336 - 2337

2338 - 2339

2340 - 2341

2342 - 2343

2344 - 2345

2346 - 2347

2348 - 2349

2350 - 2351

2352 - 2353

2354 - 2355

2356 - 2357

2358 - 2359

2360 - 2361

2362 - 2363

2364 - 2365

2366 - 2367

2368 - 2369

2370 - 2371

2372 - 2373

2374 - 2375

2376 - 2377

2378 - 2379

2380 - 2381

2382 - 2383

2384 - 2385

2386 - 2387

2388 - 2389

2390 - 2391

2392 - 2393

2394 - 2395

2396 - 2397

2398 - 2399

2400 - 2401

2402 - 2403

2404 - 2405

2406 - 2407

2408 - 2409

2410 - 2411

2412 - 2413

2414 - 2415

2416 - 2417

2418 - 2419

2420 - 2421

2422 - 2423

2424 - 2425

2426 - 2427

2428 - 2429

2430 - 2431

2432 - 2433

2434 - 2435

2436 - 2437

2438 - 2439

2440 - 2441

2442 - 2443

2444 - 2445

2446 - 2447

2448 - 2449

2450 - 2451

2452 - 2453

2454 - 2455

2456 - 2457

2458 - 2459

2460 - 2461

2462 - 2463

2464 - 2465

2466 - 2467

2468 - 2469

2470 - 2471

2472 - 2473

2474 - 2475

2476 - 2477

2478 - 2479

2480 - 2481

2482 - 2483

2484 - 2485

2486 - 2487

2488 - 2489

2490 - 2491

2492 - 2493

2494 - 2495

2496 - 2497

2498 - 2499

2500 - 2501

2502 - 2503

2504 - 2505

2506 - 2507

2508 - 2509

2510 - 2511

2512 - 2513

2514 - 2515

2516 - 2517

2518 - 2519

2520 - 2521

2522 - 2523

2524 - 2525

2526 - 2527

2528 - 2529

2530 - 2531

2532 - 2533

2534 - 2535

2536 - 2537

2538 - 2539

2540 - 2541

2542 - 2543

2544 - 2545

2546 - 2547

In the southern part, the system of adjustment used is known as the simultaneous-weighted-junction-point method. Wherever three or more lines intersect a junction point is established, and azimuth values—or coordinate values, as the case may be—are figured for this point by all feasible routes. A weight which is in inverse ratio to the square root of the distance traversed is assigned to each value, and a weighted mean computed. This weighted mean is then held fixed, and the resulting discrepancies are distributed back along the separate lines to adjacent fixed points, which may be other junction points or triangulation stations.

The office work was completed in April, 1927, and final results upon all of the traverse stations are now available. These results, including descriptions of all stations as well as coordinates, bearings, and distances, are published in Part II of this report. It is recommended that surveyors use the precise traverse stations whenever possible for permanently coordinating local surveys, and also as control for surveys of lower orders of accuracy.

Connection of new subdivision boundary surveys to the precise traverse monuments, and permanent coordinating of the boundary markers upon the City of Columbus coordinate system would make future re-establishment of these boundaries accurate and comparatively easy. If universally practiced it would also provide the City with a very accurate property dimension map of the new areas at practically no cost to the City. Such connecting surveys and coordinating are now required by ordinance in some cities where there is a proper state enabling act and where the city control survey is available. Ohio has such an enabling act, and at least one Ohio city has such an ordinance.

Columbus Standard of Length. It seems opportune here to mention the basic equipment used in testing the absolute lengths of the 100-foot steel tapes used in the distance measurement of the traverse. This is known as the Columbus Standard of Length, and is situated on the ground floor of the Engineering Experiment Building, at Ohio State University. It consists of three marked bronze discs, set in large concrete piers. The discs are set flush with the ground floor, so that the tape is supported throughout when in testing position. The concrete piers themselves are independent of the building floor, and on account of their size and protection from temperature changes should be free from any possibility of even minute displacement. After sufficient time for permanent settling had elapsed the length between end monuments was measured precisely, using 5 tapes (2 of invar and 3 of steel), all having been recently standardized by the U. S. Bureau of Standards. The resulting agreement in the lengths of the Standard as furnished by the individual tapes warrants confidence that the maximum possible error in the adopted length of the Standard is less than one one-thousandth of a foot.

The actual adopted length of this Standard, as determined by the 1926 test, is 100.016 feet.

It should be the joint responsibility of the City and the University to check this Standard at least once a year, in order to detect any displacements in the monuments.

Consistent use of the Standard by city and private surveyors would disclose many inequalities in tape lengths, and would furnish a basis for more accurate and consistent field surveys throughout the district.

Summary. The field work of the precise traverse system as now laid out, was finished on November 15, 1926. The entire net includes 79.7 miles of traverse, with 249 permanent monuments, and is connected to the triangulation scheme at 10 points. Office work was completed and final results were made available for use in March, 1927.

Possibility of Errors. For the benefit of those who anticipate using the precise-traverse results, it may be stated that traverse is not capable of a rigid mathematical proof of accuracy as is triangulation; and, in spite of all the precautions that can be taken, there is the possibility that compensative minor mistakes in distances or angles may slip by undetected. Engineers who may discover any such errors should report them immediately to the Division of Engineering so that corrections may be made and the computations revised.

PRIMARY TRAVERSE

Primary traverse is next in order of accuracy to precise, and is utilized to divide the large precise traverse circuits into loops of smaller circumference. Since it is of a lower order of required accuracy than the precise traverse, it is less expensive to execute, but its resulting monumented positions are sufficiently accurate for their practical, immediate use. This is true because the primary lines are shorter in length than the precise lines; and, while a larger closing discrepancy is allowed, the shortness of the lines reveals any ordinary blunders and mistakes, and the effect of small accidental errors is minimized by the method of adjustment.

The field procedure in running primary traverse is similar to that of precise traverse, except that the work is more rapidly done. The angles are measured with a set of eight repetitions instead of twelve, the tapes are checked upon the standard of length less frequently, slightly larger discrepancies are allowed in the inclination of the tape, etc.

At this date 9.0 miles of primary traverse have been completed, all of this being in the northeastern section of the city, and executed as part of the additional traverse necessary to control the topographic mapping program for 1927. It is planned to extend the primary traverse system from year to year, in advance of the topographic mapping program, and to publish the results as part of the Geodetic Survey when a sufficient number of stations have been established.

PRECISE LEVELS

Description. Precise levels are the foundation of the vertical survey system, as the triangulation is of the horizontal. Precise level bench marks furnish elevations of known accuracy upon which other level surveys may originate and close. The precise elevations are especially useful in the design and construction of major improvements such as sewerage systems, water distribution systems, viaducts and bridges, elimination of railroad grade crossings, tunnels, river improvements, etc.

Accuracy. The limitation of closing errors and the methods and equipment used in precise levelling have become practically standard in the United States, and the Columbus scheme has been executed in exact accordance with these accepted standards. The principal criterion is that the discrepancy in difference of elevation between the forward and backward runnings over a section shall not exceed $0.017 \sqrt{M}$, when M is the length of the section in miles. Actually, the average discrepancy in Columbus has been $0.005 \sqrt{M}$, and in only 4 cases does it reach the maximum allowed.

Another significant index of the accuracy of such levels is the circuit closure, for which no limiting value was established. The circuits in the Columbus net averaged 8.08 miles each, and the average circuit closure was 0.013 feet, or 0.002 feet per mile. The largest closure was 0.036 feet this occurring on a circuit 11.71 miles around.

Field Work. The level instrument used was a Coast Survey Model precise level, of the most modern and advanced type. It is the property of the Ohio State University and was loaned to this survey for the duration of the field work. The rods were of the wood invar type, the invar metal carrying the fine graduations, and were borrowed from the U. S. Coast and Geodetic Survey. Additional equipment included a large umbrella for protection of the instrument against sudden changes in temperature, folding windshield, and specially printed note forms.

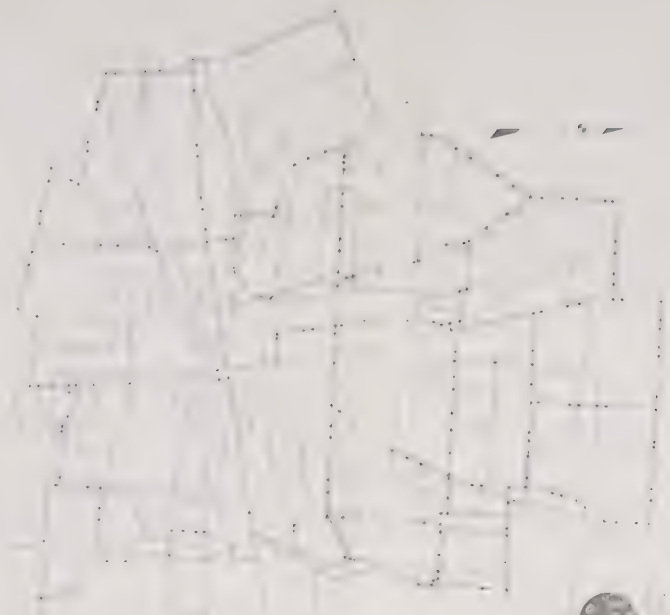
The field party, consisting of four men, carried out the field work in rigid accordance with the standard instructions covering this class of levelling.

Office Work. The first step in the office work was the detailed checking of all field notes, followed by a test of the closures of the level loops. These loop closures were then stated as condition equations, the unknown quantities being the corrections to the sides of the loops, and a least squares adjustment of the entire system computed. The corrections furnished by this adjustment were then apportioned between the various bench marks along the loop sides, and final elevations figured.

The datum plane of the Columbus elevations is now mean sea level. North American datum, as furnished by the government bench mark in the Court House building. This bench was checked and compared with another government bench at Duvalls, by running a line of precise levels between them. The resulting discrepancy would indicate that the Court House bench has not been disturbed.



DEPARTMENT OF PUBLIC WORKS
MAP OF
THE CITY AND ENVIRONS



Use of this datum by the City of Columbus is a forward step in local engineering practice. Practically all state and large public utilities now use this datum, and it seems only a question of years until all engineering projects will be based upon mean sea level datum.

Summary. The field work of the precise level net in Columbus was completed August 1, 1926. The entire system included 112.0 miles of levels, divided into 19 connected circuits or loops, and contains 278 monumented bench marks.

The original level program contemplated less than 80 miles of levelling, but an agreement was entered into with the County Engineer, whereby, in return for his supplying two rodmen for the field party, the levels were extended to the extent indicated above. This arrangement has been mutually profitable to the city and county engineering departments, in that both parties receive the benefit of additional bench marks in important areas at very little cost.

A report has been compiled giving descriptions and elevations of all precise bench marks, with an index map for finding locations of bench marks. This report, while temporary in form, has been given wide distribution in the city and county, and from the manner in which it has been received by engineers there can be no doubt but that the precise bench marks are filling a long-felt need in Columbus.

Supplementing the precise level net and furnishing bench marks of greater frequency, the work of establishing the primary bench marks is now under way. In this class of levelling, lines originate and close upon the precise bench mark elevations. This controls and simplifies the work and at the same time insures correlation. The list of Primary Bench Marks will, when completed, be printed together with the Precise list and will constitute a vertical control system of very high character.

TOPOGRAPHIC SURVEY

Description. The topographic map, briefly described, is a bird's-eye view of the city or a part of its area. Reduced in scale to desk size, it portrays, by means of contour lines and other symbols, the hills and hollows, streams and water courses, streets, buildings and property lines of the sections under consideration. From it the exact elevation and shape of the ground's surface at any point may be readily ascertained. Grades may be accurately computed, drainage areas may be scaled within a fraction of an acre, excavation quantities computed without appreciable error, and accurate profiles drawn.

The topographic map is the scientific basis for the best and most economical design and location of sewerage systems, parks and park improvements, new streets and thoroughfares, and all other improvements requiring a knowledge of the lay of the land. It is definitely useful in proportioning the rates of assessments on the benefit assessment plan, especially on such items as storm sewer and drainage projects.

One major benefit of a comprehensive and accurate topographic map is the facilities it offers for planning the thoroughfares and streets in the new areas, *in advance of development*. Probably no other phase of planning is more important than this. The street system is the backbone of the city. If it is logical and well planned, fitting the natural features of the ground, construction and operation costs will be low, and efficiency of operation will be high. If the street system just grows in accordance with the unplanned and uncoordinated ideas of land owners and developers, regardless of the individual merits of separated and individual subdivisions, the chances are that its perpetuation will be a handicap instead of an advantage. The value of a satisfactory topographical map from the standpoint of city planning activities is clear, and the possibilities of studied control of development of the future city are obvious.

Sheet Layout. As has been previously stated, the Columbus survey has been planned throughout with the idea of completing mapping in different areas as needed, from time to time, but, regardless of the time element, with all work a coordinated part of a planned whole, of equal standards of accuracy and workmanship. The topographic map sheet layout has been designed with this in mind. Sheet-edge lines are continuous, and the sheets are contiguous. The area covered by each sheet measures exactly 4000 feet north and south and 5000 feet east and west, or 460 acres. Reduced to paper size, this amounts to 20 inches by 25 inches, inside the margin. Sheet-edges match precisely. The origin of rectangular coordinates at Station Bank is the common corner for 4 sheets, and from there the sheet system can be extended practically indefinitely with a numbering system which also provides for unlimited expansion.

With the completion of the triangulation traverse, and precise level surveys, it is possible to map any sheet in any section, within the limits of these surveys, with absolute assurance of exact matching when the intervening sheets are finally mapped.

Field Work and Equipment. The sheet used in the field, upon which the map is drawn, is of heavy white drawing paper permanently mounted

upon an aluminum plate. These metal-mounted sheets are used in order to prevent the expansion or distortion which occurs when ordinary muslin-mounted sheets are exposed to the weather. The sheet is plotted in the office with rectangular boundaries, 1000 foot coordinate lines, triangulation points and traverse stations shown.

The procedure of sketching the map in the field is known as the plane table method. The plane table outfit consists of a drawing board, 24 by 31 inches in size, mounted upon an adjustable tripod, a 12-inch telescopic alidade for reading distances and elevations and for sighting the rod positions, and a 14-foot stadia rod.

The plane table party is comprised of three men. The topographer is chief of the party, operates the instrument, plots the stadia readings, and sketches the terrain. The recorder notes all instrument readings, and computes elevations and distances. The rodman goes about over the area giving rod readings at critical points.

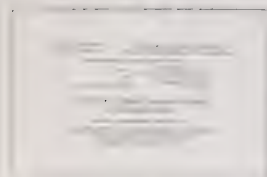
It is generally conceded that, in the hands of experienced operators, the plane table method of taking topography is, from the standpoints of accuracy and cost, superior to any other method. Its chief advantage lies in the fact that the topographic details are sketched while observing the ground, any material blunders and mistakes being thus eliminated. Further, a more accurate delineation of the surface of the ground is secured because of the fact that the contours are sketched while the party is on the ground. Comparative figures over a number of years have proven that the use of the plane table generally results in lower unit costs than other methods sometimes employed.

Property Checking. Upon completion of the field sheets, the next step is the office searching for property information. All available record plats of subdivisions, property atlases, etc., are first assembled. The distances between marked points, such as monuments, fences, street lines, block corners, etc., which can be identified upon the record plat, are then scaled from the field sheets and compared with distances shown on the plat. In those cases where there are considerable discrepancies between the scaled and recorded distances, the field sheet is returned to the field to be checked. Then all identified lines which have been checked against the plats are used as a basis from which the recorded information on the remaining lines and corners is plotted.

Reproduction. After completion of the property checking the field sheet is reproduced in three colors. The process of reproduction is by engraving on glass negatives, instead of the old-time inking, thus preserving the original sheet in pencil form.

The reproductions (see specimen sheet in back cover) are to exact scale within the limits of paper expansion, and registration is correct at all points. Two hundred copies on light-weight paper are printed on the initial order. In addition 20 copies are printed on heavy filled cloth for use in binding in atlas form. The printing plates are stored for use in printing future editions if needed.

Copies of the reproduced maps should be made available to the general public, as well as to the city and county departments.



Summary. At this date, (June 30, 1927), six topographic map sheets have been completed in the field, and five of these have been reproduced. These six sheets are numbers 128, 129, and 130 (mapped in 1926), and 177, 178, and 234 (mapped in 1927). The necessary field work on these maps has included more than 22,000 stadia readings, or "shots," and more than 1100 instrument set-ups. The sketching is controlled by an average of 8 "shots" per acre, and the average area per set-up is about 2.5 acres.



SPECIFICATIONS

Geodetic and Topographic Survey

TRIANGULATION.

1. The triangulation survey shall be precise and of the first order in respect to accuracy. Its stations, or points whose locations are established directly by the triangulation, shall be permanently monumented, and shall generally be so distributed as to average approximately one per square mile throughout the incorporated area, and about one for every two or three square miles throughout the remainder of the territory under consideration.
2. The exact locations of all stations and of all baselines, or lines measured upon the ground, shall be determined by field reconnaissance.
3. Standards for acceptable field work shall be as follows:
 - a. Stations and baselines shall be so located that the theoretical strength of computation, represented by the expression R_1 , shall not exceed a summation of 50 units in the sixth place of logarithms, between any two adjacent bases.
 - b. Baselines shall be measured with a resultant probable error not in excess of one part in four hundred thousand (1:400,000). The tapes used shall be tested for absolute length and coefficient of expansion by the Bureau of Standards of the Department of Commerce, and shall be graduated in meters to conform with the testing equipment of that Bureau. Two or more tapes shall be used in the measurement of each baseline.
 - c. The average triangle closure shall not exceed 2.0 seconds, and the maximum shall not exceed 5.0 seconds.
 - d. The average discrepancy in the sine-to-side proportions in the triangles shall not exceed 1.0 seconds, and the maximum shall not exceed 2.0 seconds.
4. Criteria for acceptable final results shall be as follows:
 - a. All observations shall be adjusted by the method of least squares.
 - b. The average discrepancy in length between adjacent bases, after the adjustment of angle and side-equations, shall not exceed 1:50,000 and the maximum shall not exceed 1:30,000. All acceptable length discrepancies shall be distributed by the inclusion of a length equation in the adjustment.
 - c. The average correction to a direction, as determined by the least squares adjustment, shall not exceed 1.5 seconds.
 - d. The probable error of an observed direction shall not exceed 1.5 seconds.
5. Plane coordinates and geographic coordinates shall be computed for all stations, the geographic being referred to North American Datum wherever reliable values for this are available.

TRAVERSE.

Traverse shall be of three grades, classified according to the accuracy required for different purposes, and called precise, primary and secondary.

Precise Traverse.

1. Precise traverse shall be used, under proper conditions and if specified, instead of triangulation. Where triangulation is the principal horizontal control survey, the precise traverse shall be employed to supplement, and shall be controlled by, the triangulation. The location of precise traverse lines and monumented stations shall be as specified by the Supervising Engineer for the Company. In general, the requirements for distribution of permanent monuments shall be at least one "pair" of monuments, (a "pair" to be considered as two intervisible monuments, from 500 to 1,000 feet apart), for each linear mile of precise traverse. Intermediate stations, necessary to connect the monumented stations, shall be considered as semi-permanent, and marked and referenced for future recovery.
2. All precise traverse lines shall originate with and close upon stations of triangulation executed according to the specifications given herein, or shall be run in closed circuits.
3. Criteria for acceptable final results will be as follows:
 - a. The tapes used shall be tested at frequent intervals, either by the Bureau of Standards or upon a local standard acceptable to the Supervising Engineer, for absolute length. If an accuracy of tape measurement in excess of 1:30,000 is required, the coefficient of expansion shall also be determined for each tape by the aforesaid Bureau.
 - b. All original field distances shall be corrected for absolute length, tension, sag, temperature, inclination and adopted datum plane.
 - c. The average angular error shall not exceed 3.0 seconds per instrument station, and the maximum shall not exceed 5.0 seconds per instrument station.
 - d. The average position closure, after distribution of azimuth errors, shall not exceed 1:30,000, and the maximum shall not exceed 1:20,000.
 - e. Final adjustment of results shall be by the method of least squares or by the method of simultaneous weighted-junction-points.

Primary Traverse.

1. Primary traverse shall be employed to supplement triangulation or precise traverse, and all lines shall originate with and close upon stations of triangulation or of precise traverse executed according to the specifications given herein, or shall be run in closed circuits.
2. Criteria for acceptable final results shall be as follows:
 - a. The tapes used shall be tested for absolute length at frequent intervals upon a local standard.

- b. All original field distances shall be corrected for absolute length, tension, sag, temperature and inclination.
- c. The average angular error shall not exceed 8 seconds per instrument station, and the maximum shall not exceed 10 seconds per instrument station.
- d. The average position closure, after distribution of azimuth errors, shall not exceed 1:15,000, and the maximum shall not exceed 1:10,000.
- e. Final adjustment of results shall be by the simultaneous junction-point method.

Secondary Traverse.

1. Secondary traverse shall be employed to supplement the triangulation, precise or primary traverse, and all lines shall originate with and close upon stations of those surveys, executed according to the specifications given herein, or shall be run in closed circuits.
2. Criteria for acceptable final results shall be as follows:
 - a. The average angular error shall not exceed 15 seconds per instrument station.
 - b. The maximum position closure, after distribution of azimuth errors, shall not exceed 1:5,000.
 - c. Final adjustment of results shall be effected by the method specified by the Supervising Engineer.

LEVELS.

Leveling shall be of two grades, classified according to the accuracy required for different purposes, and called precise and primary.

Precise Levels.

1. The precise levels shall constitute the basic control survey for all vertical positions, or elevations. The requirements for distribution and permanent monumenting of precise level elevations shall conform to those specified herein under "Precise Traverse." It is recommended that the precise level lines be parallel to and identical with the precise traverse lines, and that the precise traverse monuments be used as precise level bench marks.
2. All precise level lines shall originate with and close upon previously established precise bench marks, or shall be run in closed circuits.
3. Criteria for acceptable final results shall be as follows:
 - a. The rods used shall be tested at frequent intervals for absolute length and index error. The coefficient of expansion of the rods shall be determined at least once by laboratory tests.
 - b. All original differences of elevation shall be corrected for known-bubble-error, absolute length, index error and temperature.

- e. All discrepancies between backward and forward runnings over the same section shall agree within 0.017 foot \sqrt{M} , "M" being the length of the section in miles.
- d. Final adjustment of results shall be by the method of least squares, or simultaneous weighted-junction-points.

Primary Levels.

1. All primary level lines shall originate with and close upon precise level bench marks, or shall be run in closed circuits.
2. Criteria for acceptable final results shall be as follows:
 - a. The maximum closing error of any line or circuit shall not exceed 0.05 foot \sqrt{M} , "M" being the length of the line or circuit in miles.
 - d. Final adjustments shall be effected by the method specified by the Supervising Engineer.

TOPOGRAPHIC MAP.

1. The topographic map shall show:
 - a. Topography, or the shapes and elevations of the land surface, by means of contour lines.
 - b. Drainage, including streams of all sizes, ponds, lakes, marshes and ocean shore-lines.
 - c. Structures, including public, industrial, and commercially important buildings; private buildings in unsubdivided or sparsely-settled areas; railroads, bridges, culverts, curbs, retaining walls, bench marks and other monuments.
 - d. Property, including street and alley lines, boundaries of subdivisions or allotments and of unsubdivided properties.
 - e. Legend, or explanatory printed matter, including titles and other marginal lettering; street names; names of parks, subdivisions, streams and lakes; names of churches, schools and commercial buildings; property dimensions and index numbers; height and character of buildings; numbers of bench marks and other monuments; other lettering as the Supervising Engineer shall specify.
2. The map shall be made upon a scale of 1 inch equals 200 feet and published upon a scale of 1 inch equals 200 feet. The contour interval shall be 1 and 2 feet.
3. The topographic map shall be divided into sectional sheets which shall cover an area 5000 feet east and west, and 4000 feet north and south. The boundaries of the sheets shall be plotted upon a plane projection. The controlling points within these boundaries shall be plotted by rectangular coordinates.
4. The sheets of the topographic map shall be plotted upon the best quality of drawing paper, mounted upon metal to insure retention of sealing accuracy. The basis of plotting controlling points or other coordinated positions upon each sheet shall be a standard rectangle drafted upon it in agreement with the rectangle controlling camera

focussing and other reproduction processes. All sheets shall be supplied by the Company, mounted as above specified, with the standard rectangle drafted upon them.

5. Criteria for acceptable final results shall be as follows:
 - a. Plane table traverse closures shall not exceed 1:500, with a maximum position discrepancy of 5 feet. All closures shall be distributed by graphic adjustment.
 - b. Plane table level closures shall not exceed one-fourth of the contour interval, and shall be averaged and distributed.
 - c. Stadia readings shall be located upon the map with such frequency that;
 1. All elevations obtained from the map shall be correct within one-half of the contour interval.
 2. All horizontal distances between well-defined points shall scale with an accuracy acceptable to the Supervising Engineer.
 3. All sheet edges shall match exactly.
 4. Errors in excess of the limits described herein shall not occur in more than ten per cent of the points tested.
6. The accuracy of the map field work may be tested at any time by the City, acting through its duly authorized agent, by relieving topographers while sketching and personally examining the work in process. Another test which may be applied shall be the running of a random traverse and level line across any section of any sheet and comparing the profile so obtained with that taken from the contours crossing the route as plotted upon the map.

REPRODUCTION.

1. The scale of the reproductions, or published copies, shall be 1 inch equals 200 feet.
2. Reproductions shall conform in quality of line, color, general appearance, and in all details of cartography to the specimen map reproduction on file with the City.
3. All necessary photographic negatives shall be made with one exposure, and shall be of sufficient size to cover an entire map sheet, including margins.
4. All press plates shall scale correctly, as compared with the original map sheets, within 0.01 inch.
5. All colors of each final reproduction shall register, or agree with each other in position, within 0.01 inch. Registration marks shall be shown for each color at each corner of each reproduction.
6. The paper used shall be....., or paper of equal quality.
7. The press plates shall be the property of the Company, and shall be preserved in condition for future editions and any changes or additions incident thereto.

REPORTS.

1. Publication of all necessary reports shall be effected by the Company.
2. Published reports shall be equal in quality and in general appearances to the specimen report on file with the City.
3. All press plates shall be the property of the Company, and shall be preserved in condition for future editions and any changes or additions incident thereto.

USE OF THE STANDARD OF LENGTH

The Columbus Standard of Length, situated on the ground floor of the Engineering Experiment Building of Ohio State University, has already been fully described in Part I, of this report, under Precise Traverse. The absolute length of this standard, as determined by the 1926 tests, is 100.016 feet; but inasmuch as annual tests are contemplated this value should be confirmed before use by reference to the Department of Civil Engineering of Ohio State University, or the Department of City Planning of the City of Columbus.

Probably the most convenient and reliable procedure in testing engineers' 100-foot tapes for absolute length is as follows: With zero of tape coincident with mark on north monument, stretch tape under desired tension toward the south monument, snapping it up and down in the center several times to eliminate, as far as possible, friction with the concrete floor. Note the temperature. Using finely graduated scale, measure the discrepancy between 100-foot mark on tape and the line on south monument. Then add this discrepancy algebraically to the absolute length of the standard, and the result is absolute length of the tape, *when supported throughout* and for the given temperature and tension. If the tape is to be used in the field unsupported, as in ordinary plumb-bob taping, the correction for sag must be computed and subtracted from the absolute length when supported throughout.

NOTE: If the discrepancy between the 100-foot mark and absolute length is to be applied as a mathematical correction, the sign of this correction will be plus if the tape is too long, and minus if the tape is too short.

PART II.

LIST OF DESCRIPTIONS, ELEVATIONS, COORDINATES, AZIMUTHS AND DISTANCES OF TRIANGULATION AND PRECISE TRAVERSE STATIONS AND BENCH MARK MONUMENTS.

EXPLANATION OF TABLES

Datum of elevations is mean sea level, as furnished by the U. S. Geological Survey Bench Mark in Franklin County Court House.

Origin of rectangular coordinates is Triangulation Station Bank, having a value of 100,000 feet North and 100,000 feet East.

Aximuths are measured clockwise from the South, and are referred to the astronomic meridian passing through Triangulation Station Bank.

Descriptions of triangulation stations are shown by sketch.

System of Numbering Monuments. All monuments used as precise level bench marks are numbered consecutively from 1 to 300, as B. M. No. 1, B. M. No. 2, etc. A large majority of the bench mark monuments, however, also serve as precise traverse stations, and when used as such have another number in the form of a fraction, as $21/24$, the numerator 21 designating Line No. 21, and the denominator 24 designating Station No. 24 on this line. In every case where this class of monument number appears in this publication,—in the index, list of descriptions, and tabulation of results,—both numbers of the monument are given.

NOTE : The computed latitudes and departures of the Precise Traverse Survey have received a slight adjustment necessary to close the lines, and the adjusted latitudes and departures were used in computing the rectangular coordinates of the stations. The distances, however, are published as direct field measurements without any adjustments, while the published azimuths are those resulting from the least squares adjustment of the angles of the Precise Traverse Survey. Minor discrepancies, therefore, may sometimes be noted between the published azimuth and distance of a course and the azimuth and distance as computed from the rectangular coordinates of the terminal stations. These discrepancies will rarely exceed a proportion of one part in 25,000 and therefore need not be considered except in the most precise work.

COORDINATES OF TRIANGULATION STATIONS

Point No.	Coordinates	
	North	East
Academy	110,634.576	116,590.352
Arlington	113,476.198	83,223.436
Asylum	98,390.419	84,859.382
Bank	100,000.000	100,000.000
Brewery	86,543.465	101,291.916
East Base	107,032.356	120,757.889
Elevator	97,870.127	114,452.715
Medary	118,937.247	98,889.540
Mill	110,429.333	92,391.541
Orphanage	105,817.145	113,608.786
State	111,736.556	95,877.692
North Base	115,786.947	91,149.932

DESCRIPTIONS OF TRIANGULATION STATIONS

ACADEMY—

Point is located on top of chimney on roof St. Mary's School. St. Mary's of the Springs. Leonard Ave. and Sunbury Pike.

Point is marked by drilled hole in copper bolt set in concrete mound on top of red brick chimney on E. side of roof of highest part of building, being the W. section of the building.

Point is reached by stairway through W. section of building (enter by W. door) to attic, then through window onto lower roof, and hence by ladders to the top of chimney.

Note: Ladders must be supplied by city and care taken to avoid damaging slate roof.

Point is set about center of dividing wall across center of chimney.

Note: Could not get on chimney to get reference measurements, as ladders had been removed. O. J. M. 6/22/27.

ARLINGTON—

On Upper Arlington School building. N. Side Waltham Rd. One block E. of Arlington Ave.

Point is marked by drilled hole in copper bolt set in concrete mound on roof of cold air shaft on S. side of main chimney which is situated about the center of E. side (back) of building.

Point is reached by main stairway to top floor, and hence by ladder to roof through a manhole.

5.55' S. of S. face of chimney.

4.93' N.E. of S.W. corner of roof of cold air shaft.

5.04' N.W. of S.E. corner of roof of cold air shaft.

ASYLUM—

Ohio State Hospital for the Insane. Located on N. side of W. Broad St.

Point is copper bolt set in concrete on S.E. main tower. See Mr. Decker (Chief Engineer).

Point is near the center of roof of tower on S. side of main entrance E. side of building.

7.28' N.W. of N.W. corner of iron post on S.E. corner.

5.64' N.E. of N.E. corner of iron post on S.W. corner.

4.96' S.E. of S.E. corner of iron post on N.W. corner.

6.52' S.W. of S.W. corner of iron post on N.E. corner.

Note: Former U. S. C. & G. S. station Asylum has been transferred to the roof from the stub of the original flagpole, and is marked by a tack near the center of patch on roof.

1.945' S.E. of Triangulation Asylum.

BANK—

Point is near N.W. corner of gravel roof of high part of 16s building No. 8 E. Broad St. (not on top of elevator shaft) about 20' directly south of smoke stack.

Point is drilled hole in copper bolt set in a little mound of concrete on the roof.

1.69' S. of S. face of terra-cotta topon parapet wall on N. side of this high part of building.

2.71' E. of E. face of parapet wall on W. side.

11.88' N.W. of N.W. corner of brick wall of elevator shaft.

Eccentrics—

I—Eccentric for line to Triangulation Academy.

This point is marked by a steeple in the roof of the same part of the building where the main station is located—near N.W. corner of elevator shaft.

4.52' S.W. of S.W. corner of 24" square red brick corner post on N.E. corner of high part of building.

1.91' N.W. of N.W. corner of elevator shaft.

10.12' E. of main triangulation station.

II—Eccentric for transfer of Triangulation Bank to ground points and tie to U.S.C. & G.S. station Columbus.

This point is marked by drilled hole in copper bolt set in mound of concrete on roof near S.W. corner of elevator shaft.

1.83' N. of N. face of brick parapet wall on S. end of elevator shaft.

3.20' W. of W. face of brick parapet wall on E. side of shaft.

1.70' E. of W. face of W. wall of shaft.

Note: To reach the roof see Superintendent of Building and get roof key from basement; then take elevator to 16th floor and steps from there to the roof. Be careful to lock door and return key when leaving.

BREWERY—

This point is copper bolt set in concrete on N.E. corner of roof of Ohio Brewery on S. High St. at Reeb Ave. Mr. C. M. Rose man in charge.

The point is reached by entering the door on High St. (First floor used by Francis Dry Cleaners 1927) and taking steps all way to roof.

2.72' S. of S. face of N. parapet wall.

3.30' W. of W. face of E. parapet wall.

12.25' N. of N. face of N. wall of small tower near center of E. side of building.

EAST BASE—

Station is on roof of building of Sanitary Earthenware Co. entrance to office runs E. from Cassady Ave. (Bexley) along S. side of Penna Ry.

Point is on roof of 2nd building E. of office, and is reached by steps to second floor hence through window on W. side of building and up ladder to roof.

Point is marked by drilled hole in copper bolt set in mound of concrete about half way along the ridge of the roof.

32.29' N.E. of N.E. corner of brick chimney on S.W. part of building (brick protruding farthest out).

43.11' S.W. of S.W. corner of brick chimney on N.E. part of building (brick protruding farthest out).

26.73' N.W. of N.W. corner of brick chimney on S.E. part of building (brick protruding farthest out).

Eccentrics—

Both eccentric stations are on the roof of the western part of the only 3s building in the plant.

Points are reached by taking stairway to third floor, then ascending by ladder through manhole in roof at W. end of northern wing of building.

Each point is marked by drilled hole in copper bolt set in concrete mound on roof sloping to W. on W. wing of building.

N. Eccentric.

Set near N. end of building.

11.45' S. of 2nd brick from top of highest part of ornamental front, N. side of building.

5.405' N.W. of round point on W. side of tin ventilator farthest N.

16.17' S.E. of S.E. corner of trap door in roof near N.W. corner of building.

S. Eccentric.

Set near S. end of building.

9.820' S. of round point on W. side of tin ventilator farthest S.

24.14' N.E. of S.W. corner of roof of building.

10.60' N.W. of S. end of ridge of roof on W. wing of building.

ELEVATOR—

This point is located on the highest point of roof of the Gwinn Milling Co. on the S. side of E. Main St. at the N. & W. Ry. Mr. Heiston is man in charge.

Point is copper bolt set in concrete. This point is reached by belt elevator (or steps), ride to top, then ascend through manhole in top of roof. The manhole cover was found tied with rope at each end. Be sure to tie before leaving.

Point is 3" N. of peak of roof on highest part of building.

9.27' E. of W. end of roof.

20.37' W. of N.W. corner of manhole in roof.

MEDARY—

Point is on roof of Medary School on S.E. corner of Medary Ave. and Hudson St.

Point is marked by drilled hole in copper bolt, set in mound of concrete on roof near E. end of flat section of roof on E. side of central tower.

Point is reached by taking stairs to top floor of school, ascending by iron ladder from hall through manhole to attic, hence up more stairs into the central tower and descending through window of E. side of central tower. It is advisable to see the caretaker or the principal of the school before going on the roof.

3.88' W. of E. end of flat section of roof.

28.12' N.E. of S.W. corner of flat section of roof.

27.67' S.E. of N.W. corner of flat section of roof.

MILL—

Point is located on roof of flour mill Weisheimer Milling Co. on W. King Ave. at Hocking Valley Ry.

Point is marked by City Bench Mark plug set in concrete on ridge running N. and S. along main part of building, being about 4' from S. end of building.

Point is reached by stairway through building (see "Charlie") and onto roof through window.

3.74' N. of N. face of brick wall at S. end of building.

10.08' S. of S. end of vent in roof.

ORPHANAGE—

This point is on a chimney on Franklin County Children's Home, located at 540 Sunbury Road.

Point is reached by taking main stairway to top floor of building (Hospital), hence through door from hall and up closed stairway to attic, hence up stairway into tower on W. end of building and out through window on E. side of tower onto roof.

Point is located on chimney at S.E. corner of this section of building, being marked by a drilled hole in top of brace rod about halfway along the rod. This is a 1" round steel rod about 3½' long extending from N.W. corner of said chimney to smoke stack in center, used as a brace.

3.20' S.E. of N.W. corner of stone on top of chimney.

2.05' from end of rod at wall.

1.32' from end of rod at smoke stack.

1.70' S. of N. face of stone on top of N. wall.

2.70' E. of W. face of stone on top of W. wall.

STATE—

Point is on roof of Hamilton Hall, Ohio State University, situated on W. side of Neil Ave. between 10th and 11th Avenues.

Point is marked by drilled hole in copper bolt set in concrete mound on flat roof of elevator shaft, highest part of building, being on the south section.

Point is near center of roof of shaft which is surrounded by brick parapet wall 3' high.

4.83' N. of N. face of S. wall.

4.68' S. of S. face of N. wall.

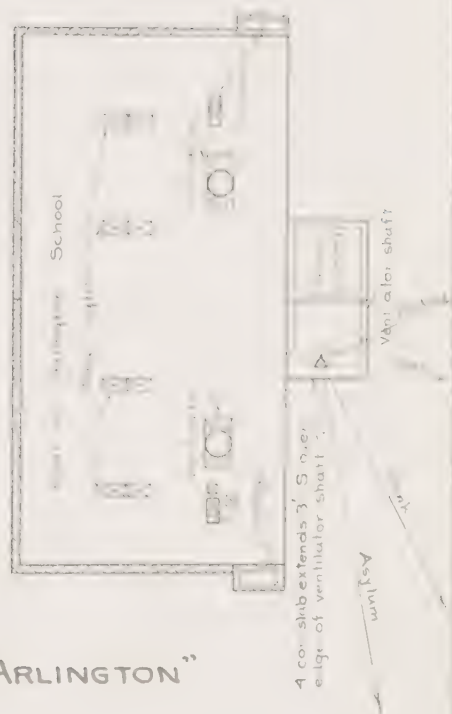
3.28' W. of W. face of E. wall.

3.73' E. of E. face of W. wall.

Point is reached by taking stairs in S. part of building to top floor, hence through window to roof, then to movable ladder to the roof of the elevator shaft. (Ladder will be found somewhere on the roof).

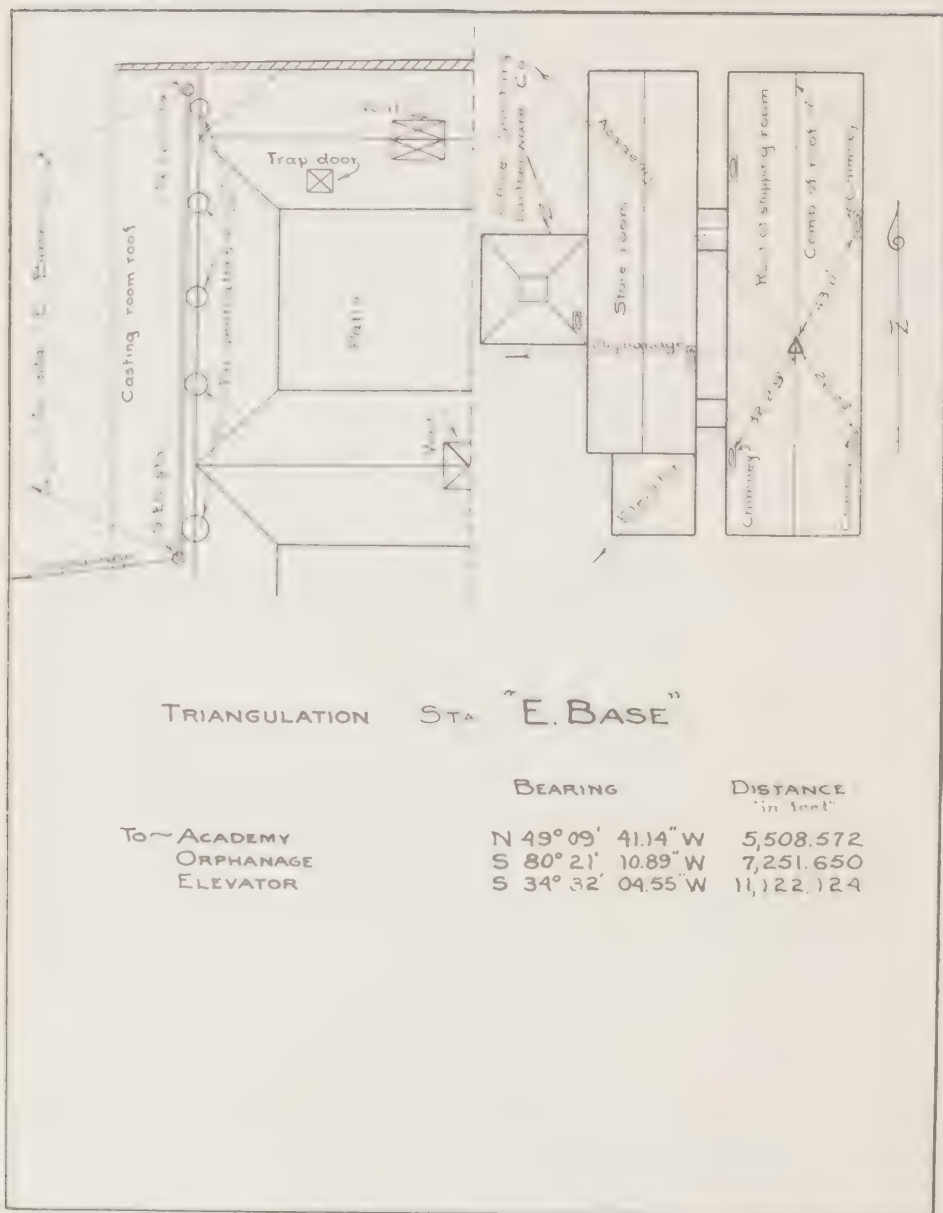
For information concerning this station see Prof. E. F. Codding, Dept. of Civil Engineering, Ohio State University.

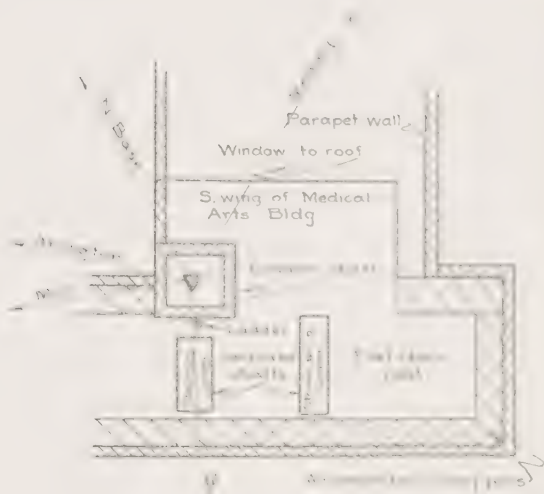
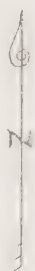
Z



TRIANGULATION STA. "ARLINGTON"

	BEARING	DISTANCE "in feet"
To~ASYLUM	S 06° 11' 20.88"E	15,174.223
BANK	S 51° 13' 33.41"E	21,518.852
STATE	S 82° 10' 20.40"E	12,773.275
MEDARY	N 70° 46' 55.03"E	16,590.656

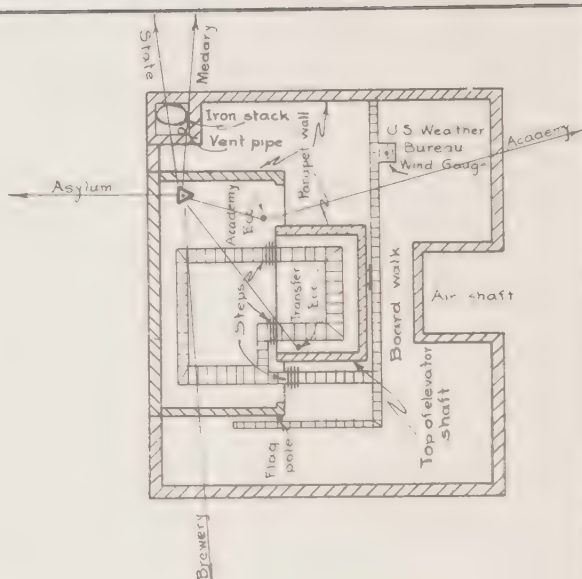




TRIANGULATION STA.

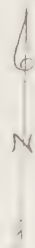
STATE

	Bearing	Distance in feet
To ~ BANK	S 19° 21' 11.29" E	12,439.460
MEDARY	N 22° 41' 53.52" E	7,805.201
N. BASE	N 49° 24' 45.03" W	6,225.543
ARLINGTON	N 82° 10' 20.42" W	12,773.275
MILL	S 69° 26' 42.58" W	3,723.182



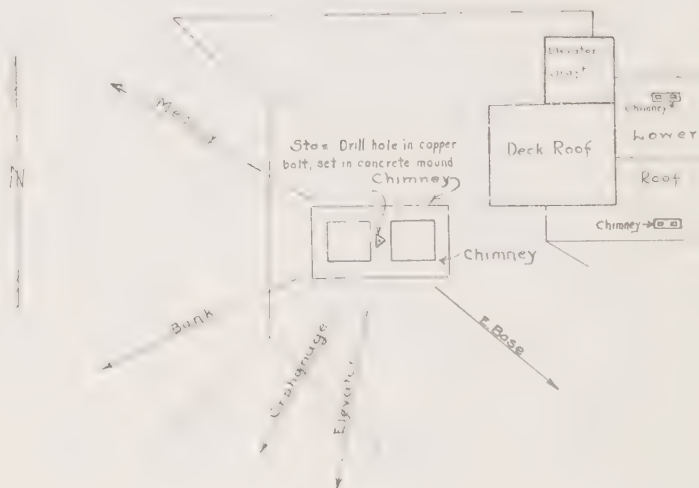
TRIANGULATION STA. "BANK"

	BEARING	DISTANCE "in feet"
To~ ACADEMY	N 57° 20' 23.05" E	19,706.192
MEDARY	N 03° 21' 21.31" W	18,969.777
STATE	N 19° 21' 11.29" W	12,439.460
ASYLUM	S 83° 55' 54.28" W	15,225.934
BREWERY	S 05° 29' 02.21" E	13,518.409



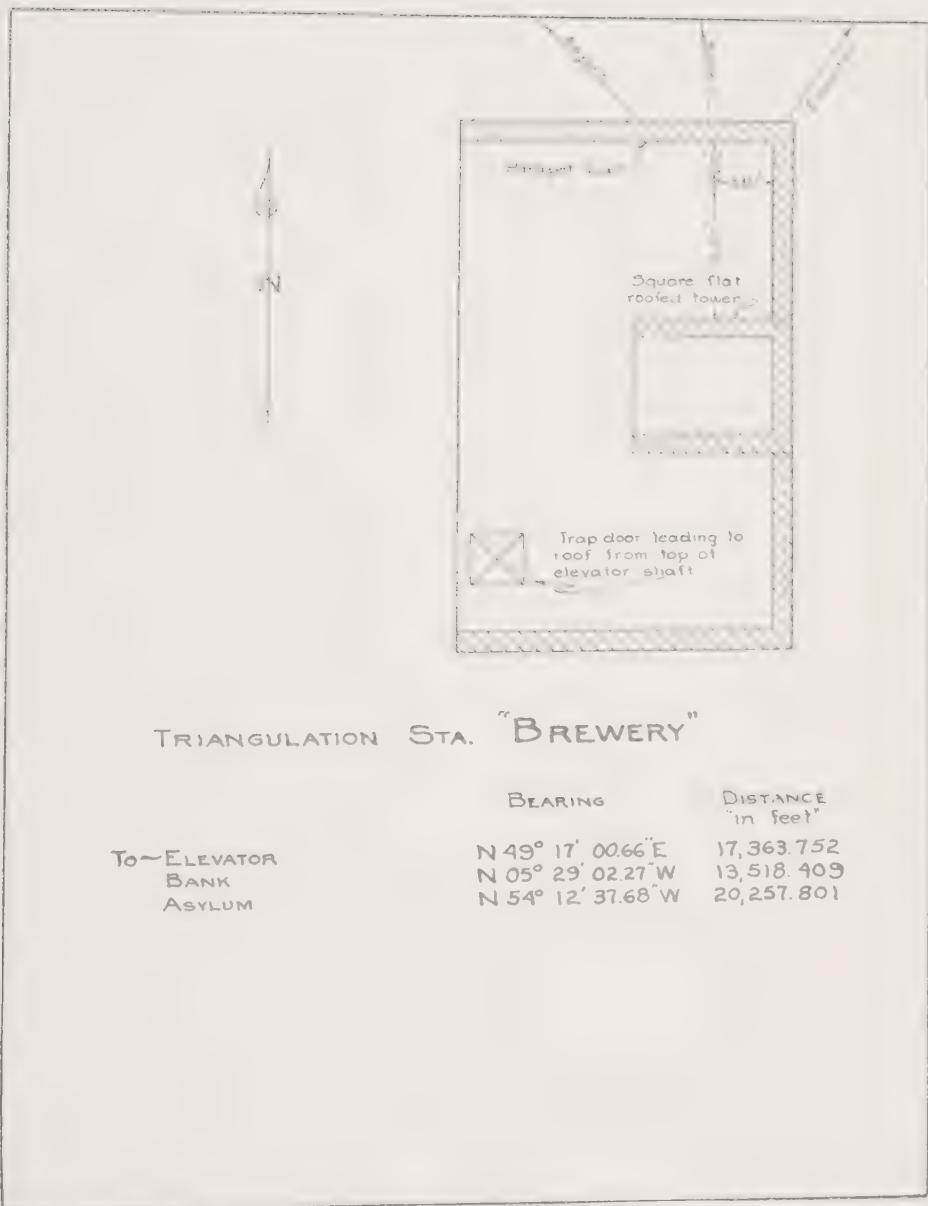
TRIANGULATION STA. "ELEVATOR"

	BEARING	DISTANCE "in feet"
To~ ACADEMY	N 09° 30' 25.17" E	12,942.204
E. BASE	N 34° 32' 04.55" E	11,122.124
BREWERY	S 49° 17' 00.66" W	17,363.752
BANK	N 81° 37' 00.31" W	14,608.810
ORPANAGE	N 06° 03' 42.41" W	7,991.703



TRIANGULATION STA. "ACADEMY"

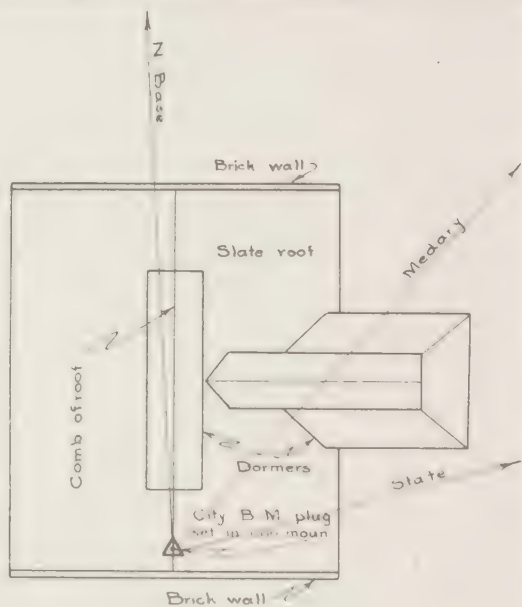
	BEARING	DISTANCE "in feet"
To~ Medary	N 64° 52' 14.86" W	19,551.294
BANK	S 57° 20' 23.06" W	19,706.192
ORPHANAGE	S 31° 45' 13.92" W	5,665.455
ELEVATOR	S 09° 30' 25.17" W	12,942.204
E. BASE	S 49° 09' 41.14" E	5,508.572



TRIANGULATION STA. "BREWERY"

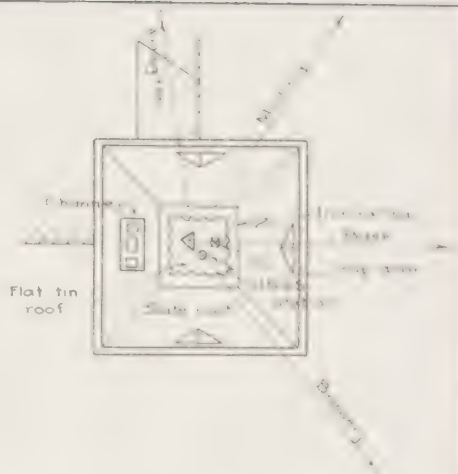
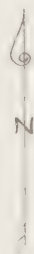
	BEARING	DISTANCE "in feet"
To~ELEVATOR	N 49° 17' 00.66"E	17,363.752
BANK	N 05° 29' 02.27"W	13,518.409
ASYLUM	N 54° 12' 37.68"W	20,257.801

26



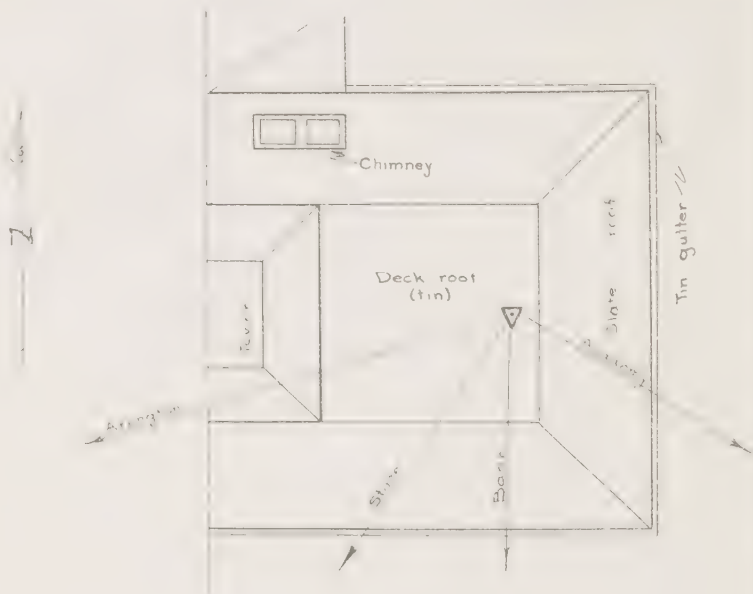
TRIANGULATION STA. "MILL"

	BEARING	DISTANCE "in feet"
To ~ STATE	N 69° 26' 42.58" E	3,723.182
MEDARY	N 37° 22' 16.06" E	10,705.539
N. BASE	N 13° 02' 51.98" W	5,499.602



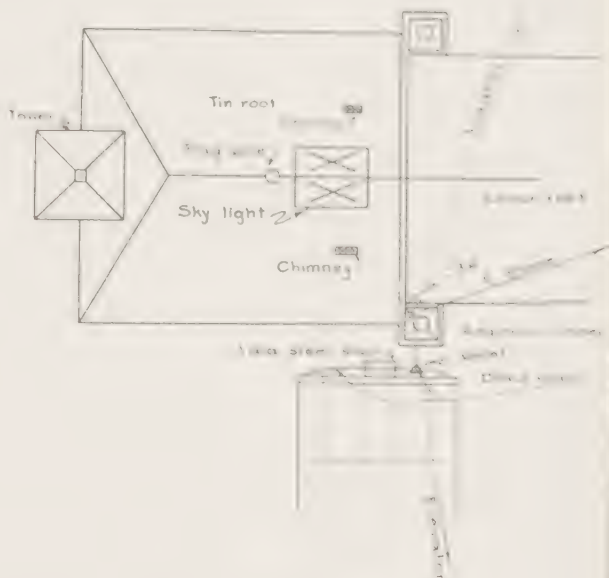
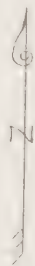
TRIANGULATION STA. "ASYLUM"

	BEARING	DISTANCE "in feet"
TO~ BREWERY	S 54° 12' 37.68 E	20,257.801
BANK	N 83° 55' 54.29 E	15,225.934
MEDARY	N 34° 19' 36.30 E	24,880.048
ARLINGTON	N 06° 11' 20.88 W	15,174.223



TRIANGULATION STA. "MEDARY"

	BEARING	DISTANCE "in feet"
To ~ ARLINGTON	S 70° 46' 55.04" W	16,590.656
STATE	S 22° 41' 53.52" W	7,805.201
BANK	S 03° 21' 21.29" E	18,969.777
ACADEMY	S 64° 52' 14.86" E	19,551.294



TRIANGULATION STA. "ORPHANAGE"

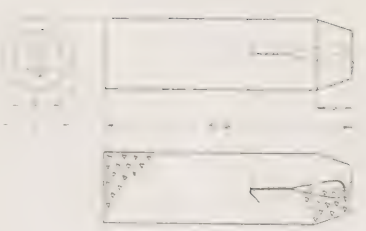
	BEARING	DISTANCE "in feet"
To ~ ELEVATOR	S 06° 03' 42.41" E	7,991.703
E. BASE	N 80° 21' 10.89" E	7,251.650
ACADEMY	N 31° 45' 13.92" E	5,665.455



BENCH MARK TABLET
Scale: Full Size



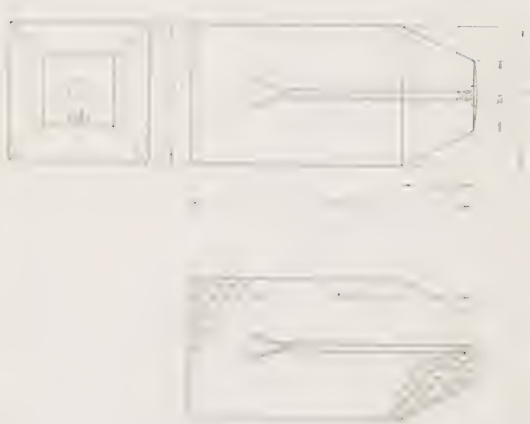
TYPICAL BASE TABLET
Scale: Full Size



TYPICAL BENCH MARK TRAVERSER
& GROUND TRANSFER MONUMENT
Scale: 1/2" = 1'-0"



SPECIAL BANK TRANSFER MONUMENT
Scale: 1/2" = 1'-0"



TYPICAL BASE MONUMENT
Scale: 1/2" = 1'-0"

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing ° ' "	Distance
	No.	E	From	To		
1/1	119150.904	99305.863	1/1	1/2	N 2 33 17 E	777.144
1/2	119927.260	99541.562	1/2	1/3	N 1 17 34.3 E	1191.447
1/3	121118.281	99568.498	1/3	1/4	N 4 12 47.2 E	891.652
1/4	122007.605	99634.047	1/4	1/5	N 2 36 18.8 W	542.136
1/5	122549.170	99609.429	1/5	1/6	N 8 49 11.8 E	579.093
1/6			1/6	1/7		
1/7			1/7	1/8		
1/8			1/8	1/9		
1/9	125624.423	99814.442	1/9	1/10	N 89 38 00.4 E	1045.885
1/10	125631.123	100860.323	1/10	1/11	S 83 24 26.0 E	633.069
1/11	125558.445	101489.232	1/11	1/12	S 87 46 56.8 E	750.239
1/12	125529.426	102238.935	1/12	1/13	S 88 42 52.0 E	808.325
1/13	125511.302	103047.085	1/13	1/14	S 85 08 10.0 E	1348.218
1/14	125396.988	104390.389	1/14	1/15	S 85 22 54.3 E	1126.037
1/15	125306.324	105512.721	1/15	1/16	N 89 19 06.5 E	713.506
1/16	125314.808	106226.180	1/16	1/17	S 84 36 00.9 E	1312.508
1/17	125191.290	107532.870	1/17	1/18	S 88 49 02.5 E	1034.640
1/18	125169.932	108567.295	1/18	1/19	S 85 59 02.8 E	778.427
1/19	125115.413	109343.814	1/19	1/20	S 83 21 00.6 E	802.214
1/20	125022.512	110140.635	1/20	1/21	S 1 5 20.6 W	1384.289
1/21	123638.420	110114.376	1/21	1/22	S 87 07 32.3 E	1277.676
1/22	123574.341	111390.517	1/22	1/23	S 88 06 50.2 E	1122.242
1/23	123537.398	112512.214	1/23	1/24	S 85 39 24.2 E	1052.499
1/24	123457.682	113561.750	1/24	1/25	N 89 51 29.7 E	547.692
1/25	123459.034	114109.741	1/25	1/26	S 3 31 00.3 W	1029.629
1/26	122431.330	114046.610	1/26	1/27	S 3 16 36.3 W	804.701
1/27	121627.934	114000.636	1/27	1/28	S 2 22 58.1 W	807.545
1/28	120821.075	113967.084	1/28	1/29	S 3 50 30.5 W	1125.816
1/29	119697.747	113891.708	1/29	1/30	S 2 39 40.6 W	910.636
1/30	118788.060	113819.470	1/30	1/31	S 3 43 00.0 W	941.829
1/31	117848.177	113788.464	1/31	1/32	S 87 55 12.5 E	1103.297
1/32	117808.116	114891.168	1/32	1/33	S 87 01 54.9 E	852.550
1/33	117763.956	115712.678	1/33	1/34	S 85 42 22.2 E	1390.752
1/34	117659.802	117129.695	1/34	1/35	S 88 12 32.1 E	607.649
1/35	117640.799	117737.121	1/35	1/36	S 21 39 43.6 E	428.120
1/36	117242.900	117895.189	1/36	1/37	S 71 33 08.4 E	382.418
1/37	117121.879	118258.001	1/37	1/38	S 1 10 50.1 W	1093.182
1/38	116028.892	118235.543	1/38	1/39	S 19 3 52.3 W	1066.816
1/39	115020.554	117887.129	1/39	1/40	S 27 49 13.6 W	467.846
1/40	114606.769	117668.799	1/40	1/41	S 45 36 38.8 W	525.337
1/41	114239.266	117293.400	1/41	1/42	S 10 6 27.3 W	415.389
1/42	113830.310	117220.521	1/42	1/43	S 23 23 09.1 W	393.191
1/43	113469.406	117061.469	1/43	1/44	S 14 42 57.6 W	786.859
1/44	112708.331	116864.621	1/44	1/45	S 16 47 02.8 W	1016.729
1/45	111734.881	116571.068	1/45	1/46	S 18 38 27.1 W	1211.469
1/46	110586.926	116183.890				
2/1	119177.700	100058.396	1/1	2/1	N 87 12 59.9 E	552.134
2/2	119083.911	100777.044	2/1	2/2	S 82 33 57.5 E	724.702
2/3	119060.055	101858.120	2/2	2/3	S 88 44 15.0 E	1081.283
2/4	119007.715	102907.202	2/3	2/4	S 87 08 11.0 E	1050.359
2/5	118908.336	103883.771	2/4	2/5	S 84 11 24.8 E	981.586
2/6	118864.635	105282.811	2/5	2/6	S 88 12 42.4 E	1399.686
2/7	118771.167	106002.868	2/6	2/7	S 82 36 16.4 E	726.058
2/8	118718.444	107186.935	2/7	2/8	S 87 27 04.4 E	1185.175
2/9	118724.670	107845.746	2/8	2/9	N 89 27 28.0 E	658.805
2/10	118646.864	109036.640	2/9	2/10	S 86 15 45.4 E	1193.367
			2/10	2/11	S 76 14 12.2 E	222.034

PLEASE SEE ERRATA SHEET, BACK COVER.

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing ° ' "	Distance
	No.	E	From	To		
2 11	118594.036	109252.311	2/11	2/12	N 89 59 59.6 E	693.631
2 12	118594.018	109945.984	2/12	2/13	S 85 17 30.2 E	1022.887
2 13	118510.027	110965.480	2/13	2/14	S 87 15 54.5 E	623.180
2 14	118480.274	111587.987	2/14	2/15	N 89 53 59.9 E	680.842
2 15	118481.444	112268.869	2/15	2/16	S 1 6 20.7 E	548.357
2 16	117933.158	112279.468	2/16	2/17	S 89 25 15.1 E	870.205
2 17	117924.339	113149.681	2/17	1/31	S 83 12 1.9 E	643.290
			2/11	3/1	N 25 18 07.9 E	848.715
3 1	119361.375	109615.038	3/1	3/2	N 22 37 18.3 E	716.305
3 2	120022.609	109890.557	3/2	3/3	N 3 26 30.0 E	524.062
3 3	120545.754	109922.015	3/3	4/11	N 3 50 24.3 E	701.899
1 11	121246.115	109969.019	4/11	3/4	N 3 50 11.1 E	113.827
3 4	121359.696	109976.632	3/4	4/10	N 3 12 06.8 E	540.481
1 10	121899.374	110006.807	4/10	3/5	N 3 11 29.3 E	335.464
3 5	122234.326	110025.480	3/5	3/6	N 3 16 03.6 E	750.198
3 6	122983.322	110068.236	3/6	1/21	N 4 01 45.9 E	656.705
			1/5	4/1	S 82 32 32.5 E	618.872
4 1	122468.838	100223.122	4/1	4/2	N 89 21 39.5 E	639.086
4 2	122475.401	100862.232	4/2	4/3	S 87 01 17.5 E	790.364
4 3	122435.011	101651.635	4/3	4/4	S 86 39 51.5 E	1446.205
4 4	122350.821	103095.542	4/4	4/5	S 86 25 03.3 E	1182.351
4 5	122276.907	104275.708	4/5	4/6	S 86 51 30.5 E	995.298
4 6	122222.332	105269.615	4/6	4/7	S 85 39 18.2 E	1030.322
4 7	122144.244	106297.006	4/7	4/8	S 81 45 26.7 E	1094.951
4 8	122011.163	107387.409	4/8	4/9	S 87 00 08.9 E	1275.777
4 9	121977.413	108661.477	4/9	4/10	S 86 40 54.1 E	1317.550
4 10	121899.374	110006.807	4/10	4/11		
4 11	121246.115	109969.019	4/11	4/12	S 87 47 41.4 E	820.325
4 12	121214.541	110788.765	4/12	4/13	S 89 11 05.1 E	721.699
4 13	121204.261	111510.416	4/13	4/14	S 81 41 52.6 E	942.980
4 14	121117.115	112449.394	4/14	4/15	S 86 01 50.5 E	1042.407
1/15		113489.337	4/15	1/28	S 61 53 33.4 E	527.578
			2/3	5/1	N 7 29 25.7 W	678.035
5 1	119732.286	101769.740	5/1	5/2	N 1 41 43.2 E	701.139
5 2	120433.099	101790.492	5/2	5/3	N 8 52 03.8 W	418.518
5 3	120816.603	101725.982	5/3	4/3	N 2 10 49.9 W	1590.194
4 3	122435.011	101651.635	4/3	5/4	N 00 17 58.0 W	691.663
5 4	123126.675	101648.023	5/4	5/5	N 2 42 47.5 W	827.237
5 5	123952.994	101608.869	5/5	5/6	N 2 36 05.4 W	809.149
5 6	124761.318	101572.146	5/6	1/11	N 5 56 19.6 W	801.419
			2/6	6/1	N 00 24 02.5 W	1006.793
6 1	119871.399	105275.755	6/1	6/2	N 00 34 26.5 W	1250.277
6 2	121121.608	105263.211	6/2	4/6	N 00 20 03.0 E	1100.748
4 6	122222.332	105269.615	4/6	6/3	N 4 34 04.8 E	752.570
6 3	122972.505	105329.571	6/3	6/4	N 6 08 26.0 E	766.199
6 4	123734.301	105411.550	6/4	6/5	N 1 28 47.2 E	963.152
6 5	124694.503	105486.804	6/5	1/15	N 2 25 27.1 E	612.374
			1/20	7/1	N 8 02 13.6 E	755.224
7 1	125770.345	110246.205	7/1	7/2	N 9 01 10.6 E	619.469
7 2	126382.162	343.392	7/2	7/3	N 17 50 00.9 E	908.346

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing	Distance
	No.	E	From	To		
7/3	127246.893	621.547	7/3	7/4	N 14 49 18.6 E	812.091
7/4	128031.990	829.266	7/4	7/5	N 17 42 59.9 E	828.111
7/5	128820.886	111081.241	7/5	7/6	N 22 02 4.11 E	476.716
7/6	129262.791	260.172	7/6	7/7	N 39 11 41.8 E	911.673
7/7	129969.366	836.278	7/7	7/8	N 36 46 35.2 E	879.099
7/8	130673.533	112362.556	7/8	7/9	N 35 55 40.9 E	1081.383
7/9	131549.223	997.036	7/9	7/10	N 03 17 13.5 E	1012.806
7/10	132559.853	113063.905	7/10	7/11	N 03 20 04.1 E	783.531
7/11	133342.085	109.459	7/11	7/12	N 03 20 31.2 E	909.683
7/12	134250.252	162.480	7/12	7/13	N 03 29 51.4 E	1059.174
7/13	135307.491	227.070	7/13	7/14	N 84 53 32.5 W	982.610
7/14	135394.989	112248.314	7/14	7/15	N 85 56 49.8 W	971.726
7/15	135463.685	111278.971	7/15	7/16	N 86 30 47.0 W	970.574
7/16	135522.734	110310.147	7/16	7/17	N 87 36 10.4 W	798.817
7/17	135556.160	109511.990	7/17	7/18	N 86 38 26.3 W	1104.778
7/18	135620.919	108109.056	7/18	7/19	N 86 24 09.9 W	839.702
7/19	135673.620	107570.967	7/19	7/20	N 85 47 27.3 W	710.612
7/20	135725.789	106862.237	7/20	7/21	N 86 28 17.9 W	141.035
7/21	135752.939	106422.016	7/21	7/22	N 87 35 31.5 W	891.512
7/22	135790.398	105531.248	7/22	7/23	N 86 34 01.0 W	933.094
7/23	135846.278	104599.783	7/23	7/24	N 85 34 37.8 W	926.402
7/24	135917.737	103676.095	7/24	7/25	N 89 11 29.5 W	1059.932
7/25	135932.723	102616.273	7/25	7/26	N 86 17 07.9 W	911.649
7/26	135992.005	101703.548	7/26	7/27	N 86 40 10.8 W	970.675
7/27	136048.282	100734.508	7/27	7/28	N 85 18 00.1 W	609.958
7/28	136098.280	100126.603	7/28	7/29	N 86 06 08.3 W	925.709
7/29	136161.233	99203.039	7/29	7/30	N 86 54 33.7 W	760.989
7/30	136202.281	98443.159	7/30	7/31	N 89 05 59.3 W	759.851
7/31	136244.244	97683.405	7/31	7/32	N 87 54 23.2 W	759.356
7/32	136212.006	96924.558	7/32	7/33	N 83 14 50.3 W	713.394
7/33	136325.912	96216.115	7/33	7/34	N 87 36 17.1 W	787.430
7/34	136358.844	95429.376	7/34	7/35	N 87 16 18.0 W	812.674
7/35	136397.552	94617.626	7/35	7/36	S 02 33 22.0 W	989.932
7/36	135408.661	94573.479	7/36	7/37	S 03 19 53.9 W	1035.881
7/37	134374.589	94513.280	7/37	7/38	S 01 42 22.1 W	685.716
7/38	133689.216	94492.865	7/38	7/39	S 02 52 57.5 W	518.605
7/39	133171.296	94466.785	7/39	7/40	S 02 29 00.1 W	784.396
7/40	132387.681	94432.800	7/40	7/41	S 02 33 51.0 W	791.715
7/41	131596.772	94397.389	7/41	7/42	S 01 52 52.6 E	537.058
7/42	131060.012	94415.027	7/42	7/43	S 11 40 40.6 E	741.262
7/43	130334.106	94565.077	7/43	7/44	S 15 59 19.7 E	779.955
7/44	129584.335	94779.927	7/44	7/45	S 12 25 59.4 E	998.439
7/45	128609.328	94994.907	7/45	7/46	S 11 28 28.3 E	1331.987
7/46	127303.984	95259.902	7/46	7/47	S 11 34 41.8 E	876.052
7/47	126415.772	95435.744	7/47	7/48	S 11 16 52.6 E	742.874
7/48	125717.263	95581.080	7/48	7/49	S 89 37 48.6 E	748.195
7/49	125712.440	96329.277	7/49	7/50	S 87 51 31.4 E	555.346
7/50	125691.695	96884.249	7/50	7/51	S 89 05 59.6 E	694.224
7/51	125680.795	97678.404	7/51	7/52	N 89 24 4.90 E	1084.279
7/52	125691.901	98662.653	7/52	1/9	S 86 38 47.6 E	1153.735
			1/13	8/1	N 00 57 26.1 W	613.056
8/1	126124.285	103036.859	8/1	8/2	N 04 22 20.4 E	801.757
8/2	126923.726	103098.006	8/2	8/3	N 04 27 14.7 E	1107.863
8/3	128028.266	103184.074	8/3	8/4	N 04 15 08.3 E	702.771
8/4	128729.115	103236.203	8/4	8/5	N 03 28 30.4 E	804.981
8/5	129532.632	103285.019	8/5	8/6	N 02 51 07.1 E	853.163
8/6	130384.755	103327.492	8/6	8/7	N 04 27 33.5 E	623.817
8/7	131006.697	103376.012	8/7	8/8	N 02 51 50.7 E	766.114

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing ° ' "	Distance
	No.	E	From	To		
8 8	131771.859	103411.536	8 8	8/9	N 03 22 37.8 E	999.933
8 9	132770.077	103473.469	8 9	8/10	N 03 28 28.3 E	1107.073
8 10	133875.138	103540.594	8 10	8/11	N 03 24 18.6 E	1097.240
8 11	134970.463	103605.797	8 11	7/21	N 01 11 33.5 E	919.857
			11 15	9/1	N 36 30 48.8 E	822.503
9 1	109341.264	103597.206	9 1	9/2	N 38 31 17.6 E	1337.050
9 2	110387.370	104129.929	9 2	9 3	N 38 11 06.5 E	829.290
9 3	111039.227	104942.598	9 3	9 4	N 41 12 14.0 E	1190.541
9 4	112160.702	105924.473	9 4	9 5	N 38 41 21.0 E	923.550
9 5	112881.601	106501.777	9 5	9 6	N 26 32 54.0 E	961.120
9 6	113741.403	106931.349	9 6	9 7	N 26 12 23.3 E	816.349
9 7	114473.860	107291.853	9 7	9 8	N 26 22 58.4 E	651.913
9 8	115057.890	107581.540	9 8	9 9	N 25 21 36.3 E	1269.855
9 9	116205.408	108125.423	9 9	9/10	N 25 23 42.6 E	715.489
9 10	116851.779	108432.265	9 10	9/11	N 21 52 13.8 E	1030.052
9 11	117786.269	108865.606	9 11	2/11	N 25 31 58.2 E	895.540
			11 6	10/1	N 02 39 32.9 E	669.817
10 1	108848.224	112552.978	10 1	10/2	N 01 47 50.4 E	729.700
10 2	109577.607	112575.853	10 2	10/3	N 05 28 52.8 E	1388.667
10 3	110960.004	112708.478	10 3	10/4	N 02 31 22.2 E	1288.466
10 4	112247.295	112765.173	10 4	10/5	N 01 22 35.8 E	1153.370
10 5	113100.399	112792.865	10 5	10/6	N 12 14 18.0 E	376.902
10 6	113768.757	112872.753	10 6	10/7	N 02 07 33.9 E	929.846
10 7	114698.017	112907.235	10 7	10 8	N 03 41 27.7 E	800.707
10 8	115497.109	112958.768	10 8	10 9	N 05 13 12.9 E	994.065
10 9	116487.108	113049.197	10 9	2 17	N 01 00 01.9 E	1440.658
			1/17	11 1	S 16 12 16.6 W	346.619
11 1	109854.300	115987.962	11/1	11 2	N 81 00 45.2 W	476.982
11 2	109904.065	115513.526	11/2	11/3	S 69 47 16.3 W	714.441
11 3	109657.253	114842.999	11/3	11 4	S 58 13 37.5 W	1224.962
11 4	109012.293	113801.474	11/4	11 5	S 58 46 59.5 W	758.316
11 5	108619.305	113152.870	11/5	11 6	S 55 05 22.7 W	769.317
11 6	108179.060	112521.911	11/6	11 7	N 86 41 26.6 W	1287.511
11 7	108253.378	111236.435	11/7	11 8	N 87 58 18.8 W	791.698
11 8	108281.394	110445.164	11/8	11 9	N 86 49 31.2 W	1061.233
11 9	108341.087	109385.519	11/9	11/10	N 84 51 05.9 W	991.024
11 10	108430.014	108398.407	11/10	11/11	N 86 43 28.9 W	1470.541
11 11	108514.027	106930.140	11/11	11 12	N 86 12 01.1 W	1126.966
11 12	108588.705	105805.853	11/12	11 13	N 86 57 38.1 W	968.887
11 13	108640.075	104837.944	11/13	11/14	N 86 57 55.9 W	910.383
11 14	108688.265	103928.758	11/14	11 15	S 86 26 10.0 W	820.918
11 15	108680.184	103107.809	11/15	11/16	N 86 59 56.8 W	776.842
11 16	108720.839	102331.968	11/16	11/17	N 86 57 11.6 W	1154.277
11 17	108782.170	101179.227	11/17	11 18	N 87 06 34.9 W	929.189
11 18	108829.007	100251.143	11 18	11 19	N 82 39 13.2 W	756.701
11 19	108925.750	99500.591	11 19	11/20	N 87 21 02.2 W	919.798
11 20	108968.251	98581.700	11 20	11 21	N 87 40 29.9 W	832.345
11 21	109002.004	97749.971	11 21	11 22	N 86 41 04.0 W	709.960
11 22	109043.052	97041.140	11 22	11 23	S 88 17 41.3 W	647.519
11 23	109023.773	96393.854	11 23	12 1	N 1 11 26.7 W	559.880
			12 1	12 2	N 8 29 33.2 W	546.115
12 2	110123.604	96301.566	12 2	12 3	N 13 44 36.9 W	711.415

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing	Distance
	No.	E	From	To		
12/3	110814.615	96132.549	12/3	12/4	N 9 09 27.6 W	756.419
12/4	111561.356	96012.162	12/4	18/1	N 1 07 13.4 E	191.202
13/1	109063.020	95415.636	11/23	13/1	N 87 42 10.1 W	978.928
13/2	109122.245	94295.377	13/1	13/2	N 86 58 26.3 W	1121.735
13/3	109184.185	93034.796	13/2	13/3	N 87 11 14.1 W	1262.002
13/4	109211.312	92576.207	13/3	13/4	N 86 36 53.6 W	459.354
13/5	110315.374	92345.655	13/4	13/5	N 11 47 41.6 W	1127.844
14/1			13/4	14/1	N 86 36 05.1 W	680.981
14/2	109307.866	91156.389	14/1	14/2	N 85 39 25.8 W	742.078
14/3	109416.848	90117.423	14/2	14/3	N 84 00 40.1 W	1014.602
14/4	109483.244	89140.844	14/3	14/4	N 86 06 35.8 W	978.773
14/5	109526.186	88496.497	14/4	14/5	N 86 11 11.8 W	645.737
14/6	109586.811	87616.608	14/5	14/6	N 85 55 09.2 W	351.996
14/7	109669.275	86390.911	14/6	14/7	N 86 14 31.4 W	1258.325
14/8	109724.422	85324.054	14/7	14/8	N 87 02 25.4 W	1068.215
14/9	109767.117	84307.556	14/8	14/9	N 87 31 33.0 W	1017.345
14/10	109827.629	83283.427	14/9	14/10	N 86 38 10.7 W	1025.830
14/11	110916.019	83228.355	14/10	14/11	N 2 53 41.1 W	1089.793
14/12	111779.119	83172.761	14/11	14/12	N 3 40 55.7 W	865.226
14/13	112358.474	83146.256	14/12	14/13	N 2 37 08.3 W	579.637
14/14	112913.319	83039.608	14/13	14/14	N 10 52 40.8 W	565.004
14/14	112913.319	83039.608	14/14	15/1	S 54 21 47.9 W	683.262
15/1	112515.702	82483.957	15/1	15/2	N 31 55 05.0 W	811.254
15/2	113180.889	82019.596	15/2	15/3	N 35 03 09.0 W	1588.691
15/3	114181.398	81107.177	15/3	15/4	N 27 51 12.2 W	961.591
15/4	115331.173	80657.171	15/4	15/5	N 11 47 51.5 W	1255.910
15/5	116560.519	80400.391	15/5	15/6	N 7 41 26.9 E	752.472
15/6	117306.204	80501.103	15/6	15/7	N 22 07 30.4 E	961.231
15/7	118196.634	80863.150	15/7	15/8	N 33 41 22.8 E	1193.614
15/8	119439.394	81691.695	15/8	15/9	N 35 52 04.2 E	1391.775
15/9	120567.218	82507.188	15/9	15/10	N 33 51 40.2 E	1358.626
15/10	121695.378	83261.218	15/10	15/11	N 32 38 48.6 E	1331.175
15/11	122818.811	83983.811	15/11	15/12	N 34 35 10.1 E	1583.714
15/12	124122.507	84883.021	15/12	15/13	N 32 09 03.9 E	840.638
15/13	124834.212	85330.389	15/13	16/11	N 35 47 39.3 E	841.807
N.Base	115786.947	91119.932	N.Base	16/1	N 03 27 57.5 W	361.501
16/1	116117.799	91128.799	16/1	16/2	N 11 48 18.7 W	234.666
16/2	118139.037	90649.258	16/2	16/3	N 85 51 59.1 W	916.413
16/3	118505.113	89735.226	16/3	16/4	N 04 35 16.2 W	1430.104
16/4	119930.681	89620.859	16/4	16/5	N 28 16 59.1 W	578.365
16/5	120437.610	89342.392	16/5	16/6	N 37 24 59.8 W	863.224
16/6	121123.204	88817.884	16/6	16/7	N 33 24 39.2 W	1274.263
16/7	122186.867	88116.211	16/7	16/8	N 36 16 51.8 W	870.284
16/8	122888.403	87601.208	16/8	16/9	N 33 27 41.1 W	716.691
16/9	123486.292	87206.028	16/9	16/10	N 33 58 04.2 W	1302.068
16/10	124566.115	86478.515	16/10	16/11	N 34 35 27.7 W	1155.061
16/11	125517.003	85822.759	16/11	16/12	N 01 08 32.1 E	1008.783
16/12	126525.546	85842.876	16/12	16/13	N 03 26 57.5 E	850.155
16/13	127374.127	85891.032	16/13	16/14	N 02 24 52.4 E	882.887
16/14	128256.195	85931.235	16/14	16/15	N 03 24 46.7 E	1176.135
16/15	129430.197	86001.262	16/15	16/16	N 04 19 46.9 E	1170.117
16/16	130596.927	86089.610	16/16	16/17	N 01 59 26.3 E	1236.198

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing ° "	Distance
	N ^c .	E	From	To		
16/17	131832.329	86132.560	16/17	16/18	N 07 51 23.1 E	605.245
16/18	132131.869	86215.297	16/18	16/19	S 86 06 20.1 E	804.681
16/19	132377.202	87018.131	16/19	16/20	N 64 16 57.1 E	847.295
16/20	132744.848	87781.508	16/20	16/21	S 86 22 32.7 E	1813.503
16/21	132630.177	89591.409	16/21	16/22	S 88 33 28.5 E	972.894
16/22	132605.674	90564.009	16/22	16/23	S 84 43 20.8 E	601.374
16/23	132550.348	91162.842	16/23	16/24	S 86 55 59.9 E	1156.426
16/24	132188.459	92317.628	16/24	16/25	S 86 35 53.1 E	850.730
16/25	132137.961	93166.871	16/25	16/26	S 86 47 11.7 E	644.192
16/26	132101.942	93810.065	16/26	16/27	S 88 41 21.2 E	622.889
17/1	120104.198	90207.002	16/5	17/1	S 87 47 07.6 E	865.221
17/2	120340.465	91322.091	17/1	17/2	S 86 43 37.7 E	1116.865
17/3	120274.818	92457.856	17/2	17/3	S 86 41 25.3 E	1137.616
17/4	120233.875	93500.188	17/3	17/4	S 87 44 56.3 E	1043.094
17/5	119618.886	93638.335	17/4	17/5	S 12 39 30.1 E	630.341
17/6	119522.478	94881.012	17/5	17/6	S 85 34 21.9 E	1249.354
17/7	119527.488	95695.765	17/6	17/7	N 89 38 52.1 E	811.735
17/8	119617.547	96142.162	17/7	17/8	N 78 35 10.4 E	455.372
17/9	118773.528	96367.596	17/8	17/9	S 14 57 08.1 E	873.642
17/10	118876.405	96874.098	17/9	17/10	N 78 31 14.3 E	516.866
17/11	119051.387	97696.037	17/10	17/11	N 77 59 01.4 E	840.393
17/12	119272.356	98694.890	17/11	17/12	N 77 31 39.7 E	1023.044
18/1	112052.459	96021.745	12/4	18/1	N 01 07 13.4 E	491.202
18/2	112993.597	95818.112	18/1	18/2	N 12 12 24.3 W	962.918
18/3	113637.661	95771.713	18/2	18/3	N 04 07 05.2 W	645.740
18/4	114375.161	95736.229	18/3	18/4	N 02 45 07.9 W	738.356
18/5	115146.342	95644.713	18/4	18/5	N 06 45 55.3 W	776.597
18/6	115132.910	96004.941	18/5	18/6	S 87 51 54.1 E	360.510
18/7	115882.113	96066.198	18/6	18/7	N 04 41 59.0 E	751.739
18/8	116610.556	96174.788	18/7	18/8	N 08 27 30.4 E	736.461
18/9	117419.564	96275.726	18/8	18/9	N 07 06 52.8 E	815.294
18/10	118025.754	96162.736	18/9	18/10	N 17 08 52.8 E	634.398
			18/10	17/9	N 07 14 54.9 W	753.805
19/1	109755.431	115959.213	11/1	19/1	S 16 12 40.3 W	102.965
19/2	109832.138	116813.075	19/1	19/2	N 81 52 03.0 E	857.345
19/3	108981.201	116627.525	19/2	19/3	S 12 17 56.1 W	870.945
19/4	108409.335	116465.253	19/3	19/4	S 15 50 22.9 W	594.451
19/5	107755.753	116377.255	19/4	19/5	S 7 39 58.9 W	659.492
19/6	106402.502	115825.699	19/5	19/6	S 22 10 20.7 W	1461.345
19/7	105385.220	115209.364	19/6	19/7	S 31 12 27.5 W	1189.421
19/8	105455.140	113698.713	19/7	19/8	N 87 21 01.7 W	1512.189
20/1	104130.362	114790.365	19/7	20/1	S 18 27 51.6 W	1322.975
20/2	102799.532	111138.554	20/1	20/2	S 26 05 28.1 W	1481.850
20/3	101925.455	113914.786	20/2	20/3	S 11 21 35.1 W	902.274
20/4	102075.461	114874.010	20/3	20/4	N 81 06 43.7 E	970.876
20/5	102312.573	116501.898	20/4	20/5	N 81 42 46.9 E	1645.053
20/6	102485.923	117691.795	20/5	20/6	N 81 42 41.2 E	1202.449
20/7	102664.075	118905.209	20/6	20/7	N 81 38 52.3 E	1226.413
20/8	102802.606	120013.828	20/7	20/8	N 82 52 39.3 E	1117.232
			20/8	21/8	N 77 51 30.0 E	738.659

PLEASE SEE ERRATA SHEET, BACK COVER

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing	Distance
	No.	E	From	To		
21/1	107231.964	120826.258	21/1	21/2	N 84 51 08.9 E	655.803
21/2	107290.796	121479.416	21/2	21/3	S 1 58 07.2 W	952.437
21/3	106338.903	121446.697	21/3	21/4	S 27 20 39.1 E	752.927
21/4	105670.092	121792.542	21/4	21/5	S 2 53 30.1 W	763.186
21/5	104907.864	121754.041	21/5	21/6	S 3 36 10.9 W	1028.814
21/6	103881.034	121689.385	21/6	21/7	S 3 52 10.0 W	799.587
21/7	103083.255	121635.126	21/7	21/8	S 82 01 15.8 W	903.110
21/8	102957.972	120735.969	21/8	21/9	S 3 12 20.0 W	1678.112
21/9	101282.433	120642.128	21/9	21/10	S 1 54 21.9 W	1137.601
21/10	100145.445	120604.289	21/10	21/11	S 3 31 53.8 W	701.943
21/11	99441.825	120561.049	21/11	21/12	S 3 31 40.7 W	767.979
21/12	98678.290	120513.790	21/12	21/13	S 2 48 52.2 W	767.941
21/13	97911.264	120476.081	21/13	21/14	S 88 11 43.8 E	595.852
21/14	97892.497	121071.637	21/14	21/15	S 3 43 01.8 W	733.115
21/15	97160.914	121024.107	21/15	21/16	S 3 24 58.3 W	940.713
21/16	96221.860	120968.050	21/16	21/17	S 4 00 18.9 W	891.394
21/17	95332.630	120905.787	21/17	21/18	S 3 35 30.3 W	843.612
21/18	94490.663	120852.936	21/18	21/19	N 85 59 51.4 W	999.283
21/19	94560.404	119856.088	21/19	21/20	N 86 13 01.2 W	1334.303
21/20	94648.428	118528.689	21/20	21/21	N 83 20 54.3 W	847.955
21/21	94746.641	117682.440	21/21	21/22	N 88 21 15.4 W	569.133
21/22	94762.982	117113.541	21/22	21/23	N 86 03 19.2 W	817.178
21/23	94819.192	116298.298	21/23	22/5	S 89 36 49.0 W	582.828
22/1	97124.689	113760.391	22/1	22/2	S 6 50 47.0 W	1118.192
22/2	96014.465	113627.073	22/2	22/3	S 0 30 39.9 W	996.025
22/3	95018.475	113618.171	22/3	22/4	S 84 15 34.7 E	1263.560
22/4	94892.090	114875.351	22/4	22/5	S 84 46 30.0 E	843.666
22/5	94815.258	115715.482	22/5	22/6	S 0 39 14.3 W	655.941
22/6	94159.349	115707.983	22/6	22/7	S 4 29 54.1 W	1380.717
22/7	92782.860	115599.666	22/7	22/8	S 24 48 14.0 E	763.219
22/8	92090.036	115919.828	22/8	22/9	S 22 22 29.0 W	406.425
22/9	91714.202	115765.106	22/9	22/10	S 38 27 05.3 E	825.647
22/10	91067.595	116278.512	22/10	22/11	S 0 08 19.3 E	1601.501
22/11	89166.070	116282.360	22/11	22/12	N 86 51 15.8 W	814.330
22/12	89510.747	115469.229	22/12	22/13	S 20 51 23.9 W	426.905
22/13	89111.807	115317.228	22/13	22/14	S 4 38 08.3 W	418.604
22/14	88661.662	115280.963	22/14	22/15	N 85 43 17.3 W	751.097
22/15	88720.690	114531.923	22/15	22/16	N 87 22 02.9 W	1059.706
22/16	88769.352	113473.305	22/16	22/17	N 85 03 36.9 W	803.223
22/17	88838.507	112673.036	22/17	22/18	N 88 14 09.2 W	951.885
22/18	88867.801	111721.568	22/18	22/19	N 85 19 07.3 W	820.745
22/19	88934.777	110903.531	22/19	22/20	N 86 36 31.2 W	895.837
22/20	88987.762	110009.231	22/20	22/21	S 3 30 06.6 W	1076.518
22/21	87913.233	109943.455	22/21	22/22	S 3 20 11.9 W	641.343
22/22	87272.935	109906.111	22/22	22/23	S 3 34 01.3 W	1244.765
22/23	86030.554	109828.645	22/23	22/24	S 0 15 02.4 W	561.693
22/24	85468.898	109821.276	22/24	22/25	N 82 32 00.3 W	709.852
22/25	85561.134	109117.418	22/25	22/26	N 88 49 56.3 W	862.877
22/26	85578.710	108254.689	22/26	22/27	N 86 22 12.2 W	1023.092
22/27	85643.474	107233.613	22/27	22/28	N 86 37 33.6 W	1283.239
22/28	85718.984	105952.555	22/28	22/29	N 87 53 38.7 W	752.922
22/29	85746.645	105200.115	22/29	22/30	N 78 15 26.8 W	421.280
22/30	85828.774	104786.904	22/30	22/31	N 87 23 19.0 W	314.010
22/31	85843.077	104473.209	22/31	22/32	N 3 09 23.4 E	383.034
22/32	86225.523	104494.293	22/32	22/33	N 87 13 57.2 W	525.953
22/33	86250.912	103968.934	22/33	22/34	N 86 37 56.5 W	576.220
22/34	86284.755	103393.688	22/34	22/35	N 86 10 30.8 W	718.898

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing ° ' "	Distance
	No.	E	From	To		
22 35	86332.702	102676.365	22/35	22/36	N 87 12 01.8 W	843.189
22 36	86368.992	101934.036	22/36	23/1	N 86 40 39.0 W	543.505
23 1	86400.496	101391.418	23/1	23/2	S 2 05 59.5 E	594.445
23 2	85806.461	101413.184	23/2	23/3	S 0 30 48.3 E	754.985
23 3	85051.519	101419.930	23/3	23/4	S 0 31 43.0 E	658.518
23 4	84393.041	101425.988	23/4	23/5	S 0 14 27.3 W	585.678
23 5	83807.379	101423.510	23/5	23/6	S 4 03 43.9 W	809.575
23 6	82999.853	101366.138	23/6	23/7	N 84 33 19.9 W	889.088
23 7	83084.220	100481.016	23/7	23/8	N 87 14 42.1 W	1333.001
23 8	83148.302	99149.489	23/8	23/9	N 86 35 13.8 W	1986.395
23 9	83266.571	97166.517	23/9	23/10	N 75 57 38.0 W	1676.503
23 10	83676.293	95540.010	23/10	23/11	S 11 56 08.6 W	593.400
23 11	83092.733	95417.268	23/11	23/12	S 28 30 22.7 W	1191.741
23 12	82045.493	94848.459	23/12	23/13	N 71 43 52.4 W	483.049
23 13	82196.923	94389.733	23/13	23/14	N 76 16 50.0 W	941.374
23 14	82420.197	93475.171	23/14	23/15	N 77 17 17.6 W	1340.160
23 15	82715.109	92167.792	23/15	23/16	N 73 51 26.4 W	1080.190
23 16	83015.446	91130.138	23/16	24/45	N 79 03 35.6 W	1133.087
24 1	97542.133	84879.477	24/1	24/2	S 85 29 10.0 W	395.685
24 2	97511.048	84485.011	24/2	24/3	S 86 38 35.3 W	953.282
24 3	97455.224	83533.356	24/3	24/4	S 86 43 03.1 W	799.761
24 4	97409.427	82734.899	24/4	24/5	S 86 34 16.7 W	663.193
24 5	97369.857	82072.881	24/5	24/6	S 86 13 58.8 W	961.527
24 6	97306.680	81113.422	24/6	24/7	N 88 23 22.2 W	802.720
24 7	97329.236	80311.011	24/7	24/8	S 86 51 08.1 W	927.869
24 8	97279.089	79384.489	24/8	24/9	S 86 11 12.1 W	1073.178
24 9	97207.712	78313.677	24/9	24/10	S 86 25 11.7 W	1162.694
24 10	97135.104	77153.211	24/10	24/11	S 81 19 36.2 W	685.617
24 11	97031.709	76475.458	24/11	24/12	N 89 19 58.1 W	740.378
24 12	97040.326	75735.123	24/12	24/13	S 81 24 51.1 W	780.079
24 13	96923.876	74963.777	24/13	24/14	S 37 22 29.1 W	399.500
24 14	96606.398	74721.267	24/14	24/15	S 3 07 05.3 E	1192.427
24 15	95415.725	74786.123	24/15	24/16	S 2 37 03.3 E	1305.361
24 16	94111.714	74845.732	24/16	24/17	S 8 11 02.5 E	1230.348
24 17	92893.884	75020.869	24/17	24/18	S 4 15 13.7 W	734.738
24 18	92161.163	74966.366	24/18	24/19	S 1 19 20.7 W	1004.529
24 19	91157.132	74934.415	24/19	24/20	S 4 19 31.1 W	837.661
24 20	90321.849	74871.235	24/20	24/21	S 0 31 29.9 E	812.053
24 21	89509.823	74878.671	24/21	24/22	S 74 17 52.5 E	848.215
24 22	89280.261	75695.261	24/22	24/23	S 71 58 32.1 E	713.772
24 23	89059.399	76373.960	24/23	24/24	S 74 04 32.7 E	929.767
24 24	88804.296	77268.039	24/24	24/25	S 74 45 28.3 E	671.071
24 25	88627.869	77915.498	24/25	24/26	S 79 25 37.9 E	699.874
24 26	88499.450	78603.483	24/26	24/27	S 76 32 27.6 E	841.040
24 27	88303.693	79121.417	24/27	24/28	S 79 53 06.5 E	626.401
24 28	88193.680	80038.076	24/28	24/29	S 74 23 24.0 E	684.505
24 29	88009.485	80697.327	24/29	24/30	S 80 04 22.4 E	757.923
24 30	87878.818	81443.895	24/30	24/31	S 75 45 21.3 E	1015.949
24 31	87628.834	82428.601	24/31	24/32	S 78 30 45.9 E	1243.628
24 32	87381.159	83647.306	24/32	24/33	S 72 31 52.3 E	664.347
24 33	87181.726	84281.008	24/33	24/34	S 31 32 11.0 W	685.002
24 34	86597.887	83922.720	24/34	24/35	S 31 34 52.6 W	1169.032
24 35	85601.981	83310.481	24/35	24/36	S 32 51 56.6 W	857.671
24 36	84881.578	82845.041	24 36	24 37	S 79 38 44.0 E	1136.704

Coordinates, Bearings and Distances of Traverse Stations

Pt. No.	Coordinates		Course		Bearing	Distance
	No.	E	From	To		
24/37	84677.264	83963.222	24/37	24/38	S 77 07 37.9 E	1341.514
24/38	84378.381	85271.007	24/38	24/39	S 73 18 31.1 E	153.881
24/39	84248.020	85705.760	24/39	24/40	S 39 27 13.5 E	196.508
24/40	84096.287	85830.630	24/40	24/41	S 87 07 08.2 E	359.396
24/41	84078.221	86189.569	24/41	24/42	S 76 44 18.7 E	334.279
24/42	84001.537	86514.931	24/42	24/43	S 80 02 26.7 E	1106.107
24/43	83810.232	87604.359	24/43	24/44	S 75 56 36.0 E	1220.884
24/44	83513.695	88788.674	24/44	24/45	S 77 01 24.5 E	1261.132
24/45	83230.498	90017.587	24/45	24/46	N 14 42 48.4 W	840.323
24/46	84043.277	89804.124	24/46	24/47	N 12 57 13.5 W	1145.683
24/47	85159.820	89547.257	24/47	24/48	N 14 18 11.6 W	774.486
24/48	85910.309	89355.887	24/48	24/49	N 1 02 27.6 W	849.658
24/49	86757.867	89295.982	24/49	24/50	N 8 28 15.6 E	416.292
24/50	87199.287	89361.772	24/50	24/51	N 2 13 27.0 E	1082.159
24/51	88280.646	89403.734	24/51	24/52	N 6 04 51.5 E	812.852
24/52	89088.936	89489.814	24/52	24/53	N 1 24 07.5 W	788.757
24/53	89877.468	89470.488	24/53	24/54	N 7 50 47.0 E	668.119
24/54	90539.341	89561.673	24/54	24/55	N 3 12 10.2 E	900.936
24/55	91438.883	89611.978	24/55	24/56	N 0 19 13.0 E	860.394
24/56	92299.276	89616.757	24/56	24/57	N 6 15 43.7 E	937.881
24/57	93231.574	89719.026	24/57	24/58	N 26 15 22.3 E	749.755
24/58	93903.983	90050.672	24/58	24/59	N 8 26 59.5 W	694.154
24/59	94590.612	89948.644	24/59	24/60	N 4 01 18.8 W	560.429
24/60	95149.669	89909.318	24/60	24/61	N 8 55 03.1 W	1135.444
24/61	96271.404	89733.267	24/61	24/62	N 8 44 55.8 W	744.227
24/62	97006.983	89620.040	24/62	25/21	N 11 19 41.8 W	1197.738
14/10	109827.629	83283.427	14/10	25/1	N 86 59 35.7 W	605.813
25/1	109859.393	82678.458	25/1	25/2	N 87 31 23.9 W	490.174
25/2	109880.565	82188.750	25/2	25/3	S 89 46 10.9 W	815.667
25/3	109877.269	81373.103	25/3	25/4	S 10 07 55.4 E	760.021
25/4	109129.070	81506.811	25/4	25/5	S 16 31 00.3 E	882.447
25/5	108284.475	81762.614	25/5	25/6	S 31 35 15.8 E	779.461
25/6	107620.470	82170.908	25/6	25/7	S 10 11 02.6 E	817.186
25/7	106816.126	82315.403	25/7	25/8	S 25 34 39.9 E	1267.242
25/8	105673.023	82862.531	25/8	25/9	S 39 19 01.2 E	816.094
25/9	105041.621	83379.628	25/9	25/10	S 62 51 00.5 E	724.552
25/10	104710.972	84024.357	25/10	25/11	S 76 11 28.6 E	1302.198
25/11	104400.129	85288.940	25/11	25/12	S 77 44 02.6 E	1204.136
25/12	104144.281	86465.607	25/12	25/13	S 65 00 46.4 E	867.123
25/13	103777.843	87251.851	25/13	25/14	S 2 03 52.5 W	1323.896
25/14	102454.752	87204.167	25/14	25/15	S 3 05 21.1 W	1023.332
25/15	101432.865	87149.029	25/15	25/16	S 3 59 21.8 W	918.454
25/16	100516.598	87085.143	25/16	25/17	S 87 02 39.6 E	1074.436
25/17	100461.174	88158.167	25/17	25/18	S 84 54 34.8 E	938.313
25/18	100377.900	89092.794	25/18	25/19	S 9 37 32.5 E	543.825
25/19	99841.709	89183.732	25/19	25/20	S 5 02 07.3 E	817.730
25/20	99027.102	89255.512	25/20	25/21	S 8 41 11.6 E	855.477
25/21	98181.403	89384.722	25/21	25/22	S 81 13 30.4 W	1120.701
25/22	98010.419	88277.084	25/22	25/23	S 81 17 53.8 W	932.807
25/23	97869.279	87354.969	25/23	25/24	S 81 08 46.7 W	801.103
25/24	97745.968	86563.373	25/24	25/25	S 82 10 14.2 W	968.109

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 1

- 1/1 B. M. 70.
- 1/2 I. P. Iron pin S.E. corner Indianola Ave. and Arcadia Ave. 2.06' W. of W. edge of E. sidewalk of Indianola Ave. 2.95' E. of E. curb of Indianola Ave. 10.8' S. of S. edge of sidewalk on S. side of Arcadia.
- 1/3 Destroyed by repavement of Indianola Ave.
- 1/4 Destroyed.
- 1/5 B. M. 226.
- 1/6 Destroyed.
- 1/7 Destroyed.
- 1/8 Destroyed.
- 1/9 B. M. 213.
- 1/10 I. P. Iron pin N. side Oakland Park Ave. 53.46' E. of gage of the E. rail of Penna. R. R. 11.54' S. of N.W. corner of N. culvert headwell 35.92' N.E. of S.W. corner of S. culvert headwall.
- 1/11 B. M. 214.
- 1/12 I. P. Ford axle in S. edge of pavement Oakland Park Ave. about 600' W. of Maize Pike. between 2 white frame houses opposite each other on Oakland Park Ave. point on E. range line of 2 story frame dwelling No. 809 Oakland Park Ave. 70.22 N. of N.E. Cor. of dwelling No. 809 Oakland Park Ave. 31.54' N.W. of tel. pole No. 1825 on S. side of road. 80.23' S.W. of hydro pole No. 16D25 1st E. of 1½ story frame dwelling No. 812 Oakland Park Ave. on N. side of road. 45.85' S.E. of hydro pole No. 16D24 1st W. of 1½ story frame dwelling No. 812 on N. side of road.
- 1/13 B. M. 215.
- 1 14 I. P. Iron pipe S. side Oakland Park Ave., about 400' W. of Howey Rd. 16.54' N. of fence on S. side of Oakland Park Ave. 42.77' S.E. of Spike head in S.E. face of 1.6' Elder tree on N. side of Oakland Park Ave., 36.2' S.W. of 4" tree on N. side of Oakland Park Ave.
- 1/15 B. M. 216.
- 1/16 B. M. 217.
- 1/17 B. M. 218.
- 1/18 I. P. Iron pin N. edge of pavement of Oakland Park Ave. about 150' W. of 2 story stucco house on N. side of road. 14.1' S.W. of 15" tel. pole. 48.53' N.E. of 10" apple tree in field S. of Oakland Park Ave. 31.1' N. of S. fence line of Oakland Park Ave.
- 1/19 B. M. 219.
- 1/20 B. M. 185.
- 1/21 B. M. 184.
- 1/22 B. M. 274.
- 1/23 I. P. N. side of Agler Rd. 42.2' E. of the range of the E. side of house No. 2102. 2.05' N. of N. curb of Agler Rd. 56.86' S.E. of house No. 2116 Agler Rd.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 1/24 B. M. 275.
 1/25 B. M. 276.
 1 26 I. P. W. side roadway Woodland Ave. on range of N. side roadway Melrose Ave., 72.24' N.E. of N.E. corner 2 story frame dwelling No. 2837 Woodland. 11.86' E. of fence corner post on N.W. corner.
 1 27 I. P. S.W. corner Woodland Ave. and Denune Ave. 56.05' S. by E. of iron pin at corner of hedge N.W. corner. 36.11' W. by S. of N.W. corner 1 story brick gas pressure regulating station on E. side Woodland Ave. 35.68' W. by N. of S.W. corner of gas pressure regulating station.
 1 28 B. M. E. side Woodland Ave. at top of grade south of ravine. 56.8' S. of range of S. side 2 story brick and frame dwelling. 6.8' W. of E. fence along Woodland, at intersection with fence running E. 39.9' W. of range of W. side of 2 story dwelling.
 1 29 I. P. W. side Woodland Ave. between Aberdeen Ave. and Mock Rd., Ford axle driven flush with ground surface at W. side Woodland Ave. dirt roadway between Aberdeen Ave. extended and Mock Rd. 74.7' S. of range of fence running W. 18.5' W. of E. fence Woodland Ave. 11.3' E. of W. fence Woodland Ave.
 1 30 I. P. E. side of Woodland Ave. about 400' N. of lane of hay barn on E. side Woodland. 129.6' S. of range of N. fence of private cemetery E. of Corn field on E. side of Woodland. 8.0' west of E. fence on Woodland. 21.0' E. of W. fence of Woodland. 11.2' N. of range of line between highest tomb stone in cemetery and 2' tree in W. fence line of cemetery.
 1/31 B. M. 289.
 1 32 I. P. Ford axle in N. edge of pavement Mock Rd. 2.5' W. of W. fence line of lane running N. to 2 story frame dwelling on W. and barn and cow shed on E. 26.0' N. of S. fence line Mock Rd. 13.1' S. of N. fence line. 19.72' S.E. of 30" Elm in N. fence line.
 1/33 B. M. 288.
 1/34 B. M. 287.
 1/35 B. M. 286.
 1/36 B. M. 285.
 1/37 B. M. 281.
 1/38 B. M. 282.
 1/39 I. P. E. side of Sunbury Pike, 60.5' S. of center line of private road W. from Sunbury Rd. 2.2' W. of guard rail on E. side of road. 71.5' N. of end guard rail post on N. side of parking lot entrance (to Valley Dale Dance Hall).
 1 40 I. P. E. side Sunbury Rd. on range of N. side of Dance pavilion (Valley Dale). 21.9' W. of N.W. corner of building. 14.0' S. of S. end of guard rail.
 1 41 I. P. W. side of Sunbury Rd. S. of "Valley Dale" Dance Hall. 72.2' S. of S. end of concrete retaining wall in front of 2 story frame dwelling on W. side of Sunbury Rd. 23.0' W.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- of guard rail on E. side of road. 54.3' S. of range of S. side of frame garage S. of house.
- 1/43 I. P. E. side of Sunbury Rd. at top of steep grade in road. N. of Holt Ave. 14.9' S.W. of end post of guard rail. 123.5' N. of the range of the N. side of 2 story brick dwelling No. 1505 on W. side of Sunbury. 12.5' S. of corner post at angle in guard rail.
- 1/43 B. M. 283.
- 1/44 I. P. E. side Sunbury Rd. 2' N. of the range of the S. side of 2 story brick dwelling. 39.4' S.E. corner of fence post on W. side of road. 15.0' W. of center of hedge in front of house on E. side of road. 36.8' N.W. of corner fence post on S. side of entrance drive to house.
- 1/45 B. M. 284.
- 1/46 B. M. 52.
- 1/47 B. M. 51.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 2

- 2/1 I. P. N.W. corner Hudson St. and Summit St. Ford axle in grass plot inside sidewalk lines. 0.50' W. of W. line of W. sidewalk Summit St. 2.50' N. of N. line of N. sidewalk Hudson St. 9.5' N.E. of 16" tel. pole at N.W. corner Hudson and Summit Sts. 12.52' S.W. of 3" elm tree in grass plot W. side of Summit St.
- 2/2 B. M. 69.
- 2/3 B. M. 68.
- 2/4 I. P. N.W. corner Hudson St. and Osceola Ave. Ford axle in grass plot inside future sidewalk lines. 11.25' N. of N. curb Hudson St. 10.35' W. of W. curb Osceola Ave. 23.17' S. of 14" poplar tree on W. side of Osceola Ave.
- 2/5 B. M. 67.
- 2/6 B. M. 66.
- 2/7 I. P. S.E. corner Hudson St. and Hamilton Ave. Inside of future inside sidewalk lines. Ford axle driven flush with ground. 13.50' S. of S. curb Hudson St. 7.47' E. of last tel. pole on Hamilton Ave. 9.14' S. of first tel. pole E. of Hamilton Ave. on S. side of Hudson St. 15.57' S.W. of second tel. pole E. of Hamilton Ave.
- 2/8 B. M. 65.
- 2/9 B. M. N.E. corner Hudson St. and Dresden St. 4.45' S. by W. of S.W. corner. con. base, of 24" sq. R.B. corner post on W. side of E. sidewalk Dresden St. (N.E. corner). 10.67' N. of N. curb Hudson St. 31.74' E. by S. of cone base of R.B. corner post on E. side of W. sidewalk Dresden St. (N.W. corner).
- 2/10 B. M. 64.
- 2/11 B. M. 181.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 2/12 I. P. N. side Hudson St. just E. of C. A. & C. Ry., Ford axle driven flush with surface of ground, 13.68' E. of gauge of E. rail of C. A. & C. Ry., 18.48' W. of first tel. pole E. of Ry. on N. side of Hudson St., No. 33-B-80, 21.12' S.W. of first tel. pole N. of Hudson St. on E. side of Ry., 37.5' N. of tel. brace pole first E. of Ry. on S. side of Hudson St.
- 2/13 B. M. 62.
- 2/14 B. M. S. side of Hudson St. in front of first frame dwelling E. of Atcheson St., on S. side of road, 34.35' E. of N. of 18" maple tree on W. side of lawn of 2-story frame dwelling described above, 11.45' N.W. of 18" maple tree on E. side of lawn of 2-story frame dwelling, 40.30' S. by E. of S.E. corner of square stone corner post on N.W. corner of street to N.
- 2/15 B. M. 61.
- 2/16 B. M. 60.
- 2/17 B. M. 59.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 3

- 3 1 I. P. E. side Cleveland Ave. near W. edge of E. sidewalk Cleveland Ave., Ford axle driven flush with ground in corner of E. sidewalk Cleveland Ave. and S. curb of driveway between Nos. 2376 and 2382 Cleveland Ave. 3.00' E. of E. curb Cleveland Ave., 0.09' W. of W. edge E. sidewalk Cleveland Ave., 10.15' N. of N. face of 12" tel. pole No. 33-B-59 in front of 2376 Cleveland Ave., 30.45' S.W. across from S.W. corner bottom concrete step of entrance to 2382 Cleveland Ave.
- 3 2 I. P. E. side of Cleveland Ave. near W. edge of E. sidewalk on N. range line of red brick store at 2460 Cleveland Ave. 3.66' E. of E. curb Cleveland Ave., 5.33' W. of N.W. corner of house No. 2460 Cleveland Ave., 70.9' S. of hydro pole No. 25-D-292 in front of 2466 Cleveland Ave. and carrying street light, 17.75' N. and across sidewalk from N.W. corner of concrete base of brick pillar on S. side of entrance to 2460 Cleveland Ave.
- 3 3 B. M. 182.
- 3 4 B. M. 183.
- 3 5 I. P. S.E. corner Cleveland Ave. and Melrose Ave., in grass plot between sidewalk and curb Cleveland Ave., 4.20' E. of E. curb Cleveland Ave., 0.10' W. of W. edge E. sidewalk Cleveland Ave., 9.30' N. of N. curb line Melrose Ave., 3.50' N.W. of tel. pole No. 25-B-3 at S.E. corner Cleveland Ave. and Melrose Ave. near E. curb Cleveland Ave.
- 3/6 I. P. N.E. corner Cleveland Ave. and Sarah Ave. in grass plot between curb and future E. sidewalk Cleveland Ave., 2.6' E. of E. curb Cleveland Ave., 9.1' N. of N. curb line Sarah Ave., 13.6' S.W. of center 4" tree at corner of N.E. corner lot Cleveland Ave. and Sarah Ave., 102.0' S. of tel. pole No. 25-B-10 1st N. of Sarah Ave. on E. side Cleveland Ave.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 4

- 4/1 B. M. S.W. corner Weber Rd. and Summit St., 13.4' E. of 7" tree 1st W. of Summit St. on S. side Weber Rd., 42.6' N. of similar 7" tree 1st S. of Weber Rd. on W. side Summit St., 12.03' S. of S. curb Weber Rd., 13.0' W. of S.E. corner at curb face of catch basin on S.W. corner Weber Rd. and Summit St.
- 4/2 I. P. N. side Weber Rd. between C. D. & M. Ry and Big Four Ry., Ford axle 2.25' N. of N. curb Weber Rd., 17.45' S.E. of tel. pole No. 7613½, first east of C. D. & M. Ry. on N. side Weber Rd., 33.45' W. of Gauge W. rail of Big Four Ry., 20.6' E. of gauge E. rail of C. D. & M. Ry.
Destroyed by gas company.
- 4/3 B. M. N.W. corner Weber Rd. and Beulah Rd., 51.7' N. of tel. pole No. 24-D-142 carrying street light, on S.W. corner Weber and Beulah, 15.5' S. of tel. pole No. 24-D-141 N. W. corner Weber and Beulah, 44.2' W. of 20" tel. pole on N.E. corner Weber and Beulah.
- 4/4 I. P. N. side Weber Rd. opposite Osceola Ave., 11.7' S.W. of tel. pole No. 7596 opposite Osceola Ave. on N. side Weber Rd., 62.6' N.W. of corner fence post S.E. corner Weber Rd. and Osceola Ave., 112.7' E. of the southerly pole of 2 tel. poles situated at first position W. of pole above described, 59.4' N.E. of 9" tree on S.W. corner Weber and Osceola.
- 4/5 I. P. N.W. corner Weber Rd. and Atwood Terrace, Ford axle about 6' S.E. of property corner, 7.45' S. by E. of tel. pole No. 7587 on N.W. corner Weber Rd. and Atwood Terrace, 125.3' W. of tel. pole No. 7586-A, first east of Atwood Terrace on N. side Weber Rd., 78.5' N.W. of 18" beach tree on S.E. corner Weber Rd. and Atwood Terrace, 135.1' E. of the southerly of two tel. poles, first position W. of No. 7587, described above.
- 4/6 B. M. N.W. corner Weber Rd. and McGuffey Ave. Free Pike about 6' S.E. of property corner, 45.20' W. of 18" hydro pole marked with yellow paint on N.E. corner, 54.15' S. of 3" elm tree first N. of Weber Rd. on W. side McGuffey Ave., 84.23' E. of hydro pole, first W. of McGuffey Ave. on N. side Weber Rd., 56.30' N. of property corner, iron tube on S.W. corner.
- 4/7 I. P. N. side of Weber Rd. opposite Hamilton Ave., Ford axle driven flush at edge of pavement, 14.2' S. of tel. guy pole, 54.9' S.W. of tel. pole No. 7571, 1st E. of Hamilton Ave. on N. side of Weber Rd., 79.0' S.E. of tel. pole —, 1st W. of Hamilton Ave. on N. side Weber Rd., 28.1' N. of tel. pole carrying street light, on S.E. corner Weber Rd. and Hamilton Ave.
- 4/8 B. M. S.W. corner Weber Rd. and Medina Ave., 15.88' N.W. of 24" poplar tree, 15.81' N.E. of N.E. corner cream colored bunga-

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- low No. 1405, 10.20' S.W. of 20" poplar tree between sidewalk and curb, 14.10' S.E. of 18" elm.
- 4 9 B. M. S.E. corner Weber Rd. and Bremen St., 0.40' N. of N. edge of S. sidewalk Weber Rd. produced, 7.90' S.E. of Hydro pole carrying street light on S.E. corner Weber Rd. and Bremen St., 59.35' W. and across sidewalk from N.W. corner bottom step of concrete walk to 1581 Weber Rd., 54.00' S. of S.W. corner of square wood street corner post on N.E. corner.
- 4 10 I. P. S.E. corner Weber Rd. and Cleveland Ave., Ford axle driven thru sidewalk, 6.75' S. of S. curb Weber Rd., 5.85' E. of E. curb Cleveland Avenue, 40.85' W. of tel. pole 25-D-220 on S. side Weber Rd. 1st E. of Cleveland Ave., 18.47' N.E. of 16" maple tree on lawn on S.E. corner Cleveland Ave. and Weber Rd.
- 4 11 Lead Hub N.E. cor. Cleveland Ave. and Aberdeen Ave. set with transit on line with B.M. 183 and Traverse Point 4/10 on Cleveland Ave. lead hub in sidewalk. 4.50' E. of tel. pole 25-D-226 on N.E. corner Cleveland and Aberdeen Aves., 2.72' N. of S. edge of N. sidewalk Aberdeen Ave., 53.87' W. of S.W. corner of base of concrete post on S. end of concrete railing on S. side of entrance to Linden School, 57.62' S.W. of S.W. corner of base of concrete end post on N. end of concrete railing on N. side of entrance to Linden School.
- 4 12 B. M. S. side Aberdeen Ave. about 195' E. of C.A.&C.Ry. bet. sidewalk and curb, 6.11' E. by S. of Hydro pole, 2nd E. of Ry. on S. side Aberdeen Ave., 1.00' N. of N. edge of S. sidewalk, 58.24' N.E. of N.E. corner concrete block foundation of 1st frame dwelling, 2nd E. of Ry. on S. side Aberdeen Ave.
- 4 13 B. M. N. side Aberdeen Ave. opposite E. side of alley bet. house at 2040 and 2046 Aberdeen Ave., 44.66' S.E. of S.E. corner of foundation of 2nd frame dwelling No. 2040 Aberdeen Ave., 33.75' S.W. of S.W. corner of foundation of 2-story frame dwelling No. 2046 Aberdeen Ave., 36.66' N. by E. of hydro pole on S.W. corner of Aberdeen Ave. and alley described above.
- 4 14 I. P. E. side of Parkwood Ave. about 2.5' N. of line of tel. poles on S. side Aberdeen Ave., Ford axle on E. edge of pavement 9.30' W. by N. of tel. guy pole on E. side of Parkwood Ave. on line of poles above described, 25.8' E. of tel. pole on S.W. corner Parkwood and Aberdeen Aves., 111.9' N.E. of 1st tel. pole S. of Aberdeen Ave. on W. side of Parkwood Ave., 111.6' S.E. of 1st tel. pole N. of Aberdeen Ave. on W. side of Parkwood Ave.
- 4 15 B. M. S.E. corner Aberdeen Ave. and Perdue Ave. at N.W. corner of school yard, 3.87' N.W. of property corner tube on S.E. corner, 47.85' S. by W. of property corner tube on N.E. corner 7.1' W. of range line of row of maple trees along front of school yard.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

16/26

S.E. cor. Henderson Rd. and Rosemary Blvd. Ford axle in S. edge of Henderson Rd. pavement on E. curb line Rosemary Blvd. 6.20' N.W. cor. at end of conc. entr. to No. 49 W. Henderson Rd. 24.94' S. by W. of fire hydrant on N.E. cor. 62.15' N. by E. of N.W. cor. of top step of conc. side entr. from Rosemary to No. 49 Henderson Rd.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 17

- 17/1 ✓ S.W. cor. Ackerman Rd. and Hocking Valley Ry. Ford axle on S. edge of pavement 22.7' W. of gauge of W. rail of Hocking Valley Ry. 26.85' E. by N. of tel. pole No. 7721 1st W. of Ry. on S. side of road. 28.17' S. of S.W. cor. conc. culvert headwall on N. side of road. 16.19' N.W. of N.W. cor. conc. culvert headwall on S. side of road.
- 17/2 S. side Ackerman Rd. opp. 9th tel. pole No. 7712 E. of Hocking Valley Ry. on S. side road. Ford axle in S. edge of pavement 13.58' N. of tel. pole No. 7712 above desc. 31.73' S. of tel. pole opp. No. 7712 on N. side of road. 53.82' S.E. of 10" poplar tree on N.W. cor. Ackerman Rd. and entrance drive to farm barn. -
- 17/3 S. side Ackerman Rd. opp. tel. pole No. 7703, 1st on S. side of Rd. where line crosses from N. side. Ford axle in S. edge of pavement. 12.42' N. of tel. pole No. 7703 above desc. 83.5' S.E. of 7" tel. pole 1st W. of a point opp. No. 7703 on N. side of road. 91.72' N.E. of 7" tel. pole, 1st S. of a point opp. No. 7703 on N. side of road 34.0' S. of N. fence Ackerman Rd.
- 17/4 B. M. 239.
- 17/5 B. M. 240.
- 17/6 ✓ S. side Dodridge St. Ford axle at S. edge of concrete pavement opp. an expansion joint about opp. midway bet. 4th and 5th hydro pole W. of Olentangy River Bridge on N. side of Dodridge St. 18.9' N.E. of tel. pole on S. side rd. 123.4' E. by S. of 5th hydro pole W. of bridge on N. side of road. 35.6' S. of S. edge of N. sidewalk Dodridge St. 84.95' W. by S. of 4th hydro pole W. of Bridge on N. side of Rd.
- 17/7 ✓ N. edge of future N. sidewalk Dodridge St. about 2.5' E. of stone abutment on E. end of bridge. Ford axle driven flush. 2.8' E. of E. face of 5" sq. base of steel end post at E. end of N. guard rail of bridge. 5.83' N. of tel. pole No. 32-A-31, 1st E. of bridge on N. side of road. 4.73' S. of most easterly point of stone pier on E. end of bridge.
- 17/8 B. M. 241.
- 17/9 B. M. 74.
- 17/10 B. M. 73.
- 17/11 ✓ S. W. cor. Hudson St. and Findlay St. Ford axle on N. edge of S. sidewalk Hudson St. 28.76' N.W. of N.W. cor.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

12" sq. R.B. cor. post of porch of 2s frame dwelling No. 2557 Findlay St. 2.8' S. of S. curb Hudson St. 13.23 W. of N.W. cor. of catch basin in curb on S.W. cor.

17 12 B. M. 72.

DESCRIPTION OF TRAVERSE STATIONS

LINE No. 18

18 1 B. M. 79.

18 2 ✓ W. side Neil Ave. between sidewalk and curb. Ford axle on N. edge of N. curb turn in of drive between H. & F. Bldg. and Campbell Hall, Ohio State University. 6.1' W. of W. curb Neil Ave. 8.94' E. of E. edge of W. sidewalk Neil Ave. 62.05' S. of E. cor. of S. face of base of iron lamp standard 1st S. of entrance to Horticulture and Forestry Building, Ohio State University.

18 3 W. side of Neil Ave. Ford axle on E. edge of W. sidewalk. 10.24' N.W. of W. cor. of N. face of base of iron lamp standard 1st N. of entr. to Townsend Hall, O. S. U., on W. side Neil Ave. 72.25' W. of W. face of 12" square conc. mon. on E. side Neil Ave. opposite Townsend Hall. 56.8' S.E. of N.E. cor. of stone foundation of Townsend Hall.

18 4 ✓ W. side Neil Ave. between sidewalk and curb. Ford axle on S. edge of curb at turn-in on S. side of Stadium Drive opposite Journalism Bldg., O. S. U. 1.35' E. of E. edge W. sidewalk Neil Ave. 40.1' S.W. of fire hydrant on N.W. cor. Neil Ave. and Stadium Drive. 72.81' N. of N. face of iron light standard 1st S. of Stadium Dr. on W. side Neil Ave.

18 5 B. M. 78.

18 6 B. M. 77.

18 7 S.W. cor. Neil Ave. and W. Lane Ave. Ford axle 10.78' E. of E. edge of W. Sidewalk Neil Ave. 30.8' N.E. of N.E. cor. 2-story red brick dwelling on S.W. corner No. 189 W. Lane Ave. 0.6' W. of W. curb of Neil Ave.

18 8 S.W. cor. Northwood and Neil Ave. Ford axle at E. edge of W. sidewalk Neil Ave. 3.34' W. of W. curb Neil Ave. 47.45' N. and across sidewalk from N.E. cor. bottom step of concrete entrance walk to rear of red brick dwelling No. 159 Northwood Ave. 26.29' N.E. of N.E. corner of house No. 159 Northwood Ave. 10.6' S. or range of S. side of S. sidewalk Northwood Ave. produced.

18/9 B. M. 76.

18 10 B. M. 75.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 19

19 1 B. M. S.E. cor. Sunbury Ave. and Cols. and Johnstown F.P. set with transit on line with B.M. 49 and B.M. 51. Ford axle on S. edge of pavement. 35.0' N.E. of tel. pole No. 42-D-99

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

Cleveland Ave. 88.0' N. and across sidewalk from tel. pole 1st S. of Ormond Ave. on E. side Cleveland.

7/9 B. M. 190.

7/10 B. M. 191.

7/11 I. P. N.W. corner Cleveland Ave. and Nottingham Rd. Ford axle driven flush. 3.84' W. of W. curb Cleveland Ave. 50.05' N.E. of N.E. cor., 2' square R.B. cor. post on S.W. cor. Cleveland and Nottingham Rd. 6.45' E. of S.E. cor. 2' square R.B. cor. post on N.W. cor. Cleveland and Nottingham Rd.

7/12 B. M. 192.

7/13 B. M. 193.

7/14 I. P. N. side of Morse Rd. opposite E. side of Avalon Ave. Ford axle N. edge of pavement. 47.05' W. of 5th tel. pole W. of Cleveland Ave. on N. side of Morse Rd. 74.1' N.W. of 5th tel. pole W. of Cleveland Ave. on S. side of Morse Rd. 52.5' E. of E. range line of 1-story frame dwelling No. 2330 Morse Rd. on N.W. cor. Avalon Ave.

7/15 B. M. 194.

7/16 B. M. 195.

7/17 I. P. N. side of Morse Rd. Ford axle in edge of pavement about 3' E. of E. range line of house No. 2041 Morse. 15.1' S. of N. fence line Morse Rd. 63.22' N. by E. of N.E. cor. of 1½-story section of rough cast house No. 2041 Morse. 138.0' N.W. of tel. pole 1st E. of No. 2041 on S. side Morse Rd. 72.5' N.E. of tel. pole 1st W. of No. 2041 on S. side Morse Rd.

7/18 I. P. N. side Morse Rd. about 125' E. of E. range line of old frame house No. 1820 Morse Rd. Ford axle on N. edge of pavement. 14.3' S. of N. fence line Morse Rd. 35.6' N.E. of tel. pole 1st E. of house No. 1820 Morse Rd. on S. side 49.07' E. by S. of Maple tree. 1st E. of No. 1820 Morse Rd. about 1' N. of N. fence line.

7/19 I. P. N. side Morse Rd. Ford axle in E. edge of pavement 9.0' W. of W. range line of frame house No. 1735 Morse Rd. 15.0' S. of N. fence line Morse Rd. 100.1' W. and across road from tel. pole 1st E. of No. 1735 on S. side Morse Rd. 88.2' N. by W. of N.W. cor. of R.B. foundation of No. 1735 Morse Rd. 35.12' N. by E. of 6" telephone pole on S. side of road just E. of entrance drive to No. 1735 Morse Rd.

7/20 B. M. 196.

7/21 B. M. 197.

7/22 I. P. N. edge of pavement, Morse Rd. Ford axle about 35' W. of entrance drive to No. 1450 Morse Rd. 82.6' W. of tel. pole 5th W. of Hess Free Pike on N. side Morse Rd. 31.34' N. by W. of tel. pole. (No. 1720) opp. 1½-story frame dwelling No. 1450 Morse Rd. 132.9' E. of tel. pole 6th W. of Hess Free Pike on N. side of Morse Rd. 18.3' S. of N. fence line Morse Rd.

7/23 I. P. N. edge of pavement Morse Rd. Ford axle about opp. a point midway between 4th and 5th tel. poles of Clinton and Sharon Free Pike and N. side of Morse Rd. 147.5' E. by S.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

of 4th tel. pole as above. 100.7' W. by S. of 5th tel. pole as above. 30.33' N. of tel. pole (E 36) 9th tel. pole E. of Clinton and Sharon Free Pike on S. side of Morse Rd. 31.15' S.W. of 12" tree about 2' N. of N. fence Morse Rd. and 1st tree E. of two-story R.B. and shingle farm house, No. 1300 Morse Rd.

7 24 B. M. 198.

7 25 B. M. 199.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 7

7 26 I. P. S. side of Morse Rd. (Rathbone Ave.) Ford axle in S. edge of pavement. 26.78' N. by W. of N.W. cor. of 24" sq. R.B. cor. post on S.W. cor. Rathbone and N. 4th St. 37.89' E. of tel. pole No. 10-B-17 1st W. of N. 4th St. on S. side of Rathbone. 39.92' S. by E. of 6" tel. pole 1st W. of N. 4th St. on N. side of Rathbone Ave. 43.60' N.W. of N.W. cor. 24" R.B. sq. cor. post on S.E. cor. Rathbone and N. 4th St.

7/27 I. P. S.W. cor. Rathbone Ave. and Summit St. Ford axle in S. edge of Rathbone Ave. pavement, about 2' E. of W. prop. line Summit St. 28.16' N. by W. of N.W. cor. 24" square R.B. cor. post on S.W. cor. Rathbone and Summit. 70.8' W. of W. range line of 1½-story frame dwelling on S.E. cor. Summit and Rathbone. 76.6' E. of tel. pole No. 10-B-12, 1st W. of Summit St. on S. side of Rathbone Ave. 34.7' S. by W. of 6" tel. pole opp. Summit St. on N. side Rathbone.

7 28 I. P. N. edge of pavement Rathbone Ave. bet. Big Four and C.D. & M. Rys. Ford axle 37.17' E. of gauge of E. rail C.D. & M. Elect. Ry. 17.38' W. of gauge W. rail of most westerly track of Big Four Ry. 39.4' N.E. of tel. pole No. 10-A-28 on S.E. cor. Rathbone Ave. and C.D. & M. Ry.

7 29 B. M. 200.

7 30 B. M. 201.

7 31 I. P. S.W. cor. Rathbone Ave. and Moose St. Ford axle in S. edge of pavement. 28.95' S. of 6" tel. pole 1st W. of Moose St. on N. side of Rathbone Ave. 7.52' N. by W. of fire hydrant on S.W. cor. Rathbone and Moose St. 100.3' W. of tel. pole No. 10-A-15 1st E. of Morse St. on S. side of Rathbone Ave. 107.5' E. of tel. pole No. 10-A-14 1st W. of Moose St. on S. side of Rathbone Ave.

7 32 B. M. 202.

7 33 B. M. 203.

7 34 I. P. N. side of Rathbone Ave. in front of 1-story frame dwelling No. 102 Rathbone Ave. 33.79' N.E. of tap of fire hydrant. 34.84' S.W. of 18" oak tree on E. side of driveway to barn. 26.74' S. of 24" oak on W. side of driveway. 30.75' S.E. of 2nd tree W. of driveway.

7/35 B. M. 204.

7/36 B. M. 205.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 7/37 I. P. S.W. cor. High St. and Nottingham Rd. Ford axle at intersection of inside sidewalk lines. 19.15' W. of W. curb High St. 14.20' S. of S. curb Nottingham Rd. 7.77' N.E. of center of small tree on S.W. cor. 56.0' N. by W. of tel. pole 1st S. of Nottingham Rd. on W. side High St.
- 7/38 I. P. N.W. cor. High St. and Weisheimer Rd. Ford axle bet. sidewalk and curb on High St. on S. edge of N. sidewalk Weisheimer Rd. 9.48' W. of W. curb High St. 7.45' N. of N. curb Weisheimer Rd. 4.55' E. of E. edge of W. sidewalk High St. 16.10' S. by W. of 18" Maple tree 1st N. of Weisheimer Rd. on W. side of High St.
- 7/39 B. M. 206.
- 7/40 B. M. 207.
- 7/41 I. P. S.W. cor. High St. and Cook Rd. W. Ford axle 12.20' W. of W. curb High St. 28.20' N. of 20" maple tree 1st S. of W. Cook Rd. on W. side High St. 43.16' S. by W. of tel. pole 1st N. of W. Cooke Rd. on W. side of High St. 43.50' S.E. of 9" maple tree 1st N. of W. Cooke Rd. about 30' W. of W. curb High St. (This Ford axle may have to be replaced when W. sidewalk is laid on High St.)
- 7/42 I. P. W. side High St. opp. N. side Clement Ave. Ford axle on inside edge of W. curb High St. 4.25' N. of tel. pole No. 15-B-374 about opp. Clement Ave. on W. side High St. 0.52' W. of W. curb High St. 68.40' S. of tel. pole No. 4237 1st N. of No. 15-B-374 above desc. on W. side High St. 50.95' N.E. of N.E. cor. of stone foundation of two-story frame dwelling No. 4207 N. High St.
- 7/43 I. P. W. side High St. about on line with straight section of N. sidewalk Overbrook Dr. Ford axle on inside edge of W. curb. 0.58' W. of W. curb High St. 42.77' N. of tel. pole 4th S. of Westwood Rd. on W. side of High St. 61.82' S. of tel. pole No. 15-B-331 3rd S. of Westwood Rd. on W. Side of High St.
- 7/44 B. M. 208.
- 7/45 B. M. 209.
- 7/46 I. P. S.E. cor. High St. and Glencoe Rd. Ford axle in W. edge of E. sidewalk High St. 12.24' N.W. cor. 24" sq. grey br. cor. post inside sidewalk lines on S.E. cor. 13.88' E. of E. curb High St. 14.73' S.W. of fire hydrant near S. curb Glencoe Rd. about 25' E. of E. curb High St.
- 7/47 B. M. 210.
- 7/48 B. M. 211.
- 7/49 I. P. S. side Oakland Park Ave. bet. sidewalk and curb. Ford axle on E. edge of entr. walk to No. 91 Oakland Park Ave. 7.15' S. of S. curb Oakland Park Ave. 2.00' N. of N. edge of S. sidewalk Oakland Park Ave. 10.44' E. by S. of 8" tree in grass plot bet. S. sidewalk and curb Oakland Park Ave. about 5' W. of entr. walk of No. 91 Oakland Park Ave.
- 7/50 I. P. S. edge of S. sidewalk Oakland Park Ave. Ford axle opp. E. side Fredonia Ave. 14.10' S. of S. curb High St. 1.15'

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

N.W. of N.W. cor. bottom step of conc. entr. walk to 163 Oakland Park Ave. 16.75' W. and across sidewalk from point of intersection of N. edge S. sidewalk Oakland Park Ave. and W. edge conc. entr. drive of No. 163 Oakland Park Ave. Driven about 2" below sidewalk level.

- 7/51 I. P. S. side Oakland Park Ave. between sidewalk and curb. Ford axle on E. edge of conc. entr. dr. to No. 255 Oakland Park Ave. 7.75' S. of S. curb Oakland Park Ave. 1.35' N. of N. edge of S. sidewalk Oakland Park Ave. 44.13' E. by N. of bottom step of conc. entr. walk to No. 247 Oakland Park Av.
- 7/52 B. M. 212.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 8

- 8/1 B. M. 220.
8/2 W. side Clinton-Sharon F/P opp. Evans Rd. Ford axle in W. edge of pavement. 16.15' E. of W. fence line Cl. Sh. F/P. 33.78' W. S. of tel. pole. No. 1805 on N.E. cor. Cl. Sh. F/P and Evans Rd. 30.7' S. of S. range line of 1½-story frame dwelling on N.E. cor. Cl. Sh. F/P and Evans Rd. 39.5' N. of S. fence line Evans Rd.
- 8/3 E. side Cl. Sh. F/P opp. N. side Moon Lane. Ford axle in E. edge of pavement. 37.3' N. by W. of tel. pole 2nd S. of Acton Rd. on E. side Cl. Sh. F/P. 74.00' N.E. of N.E. cor. of bottom conc. step to front porch of 1½-story brick dwelling on S.W. cor. Cl. Sh. F/P. and Moon Lane. 34.5' E. of W. fence line Cl. Sh. F/P. 99.00' S. by W. of tel. pole 1st S. of Acton Rd. on E. side Cl. Sh. F/P.
- 8/4 B. M. 221.
8/5 B. M. 222.
8/6 E. side Clinton-Sharon F/P N. of a point about midway between 6th and 7th tel. poles S. of Cooke Rd. Ford axle in E. edge of pavement 34.10' E. of W. fence line Cl. Sh. Free Pike. 16.45' W. of E. fence line Cl. Sh. F/P. 45.05' S. by W. of 6th tel. pole S. of Cooke Rd. on E. side of Cl. Sh. F/P. 92.10' N. by W. of 7th tel. pole S. of Cooke Rd. on E. side of Cl. Sh F/P.
- 8/7 B. M. 223.
8/8 B. M. 224.
8/9 E. edge of pavement Clinton-Sharon Pike opp. 8th tel. pole N. of culvert headwall used as reference for B.M. 224. 13.31' W. of tel. pole above desc. 33.20' E. of W. fence line Cl. Sh. Pike. 58.45' S. of S. range line 2-story R.B. dwelling. 1st N. of Cook Rd. on E. side of Clinton-Sharon Pike.
- 8/10 E. edge of pavement. Clinton-Sharon Free Pike opp. 8th tel. pole N. of 2-story R.B. dwelling desc. under Pt. No. 8/9 on E. side of road. Ford axle 14.04' W. of 8th tel. pole above desc. 33.90' E. of 16" elm tree on W. fence line C. Sh F/P. and opp. tel. pole above desc. 76.5' N.E. of 8" elm tree

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 8/11 1st S. of elm tree desc. above and on W. fence line Cl. Sh. F/P. 176.7' S. of sidewalk cor. of conc. culvert headwall on E. side of Cl. Sh. F/P.
E. edge of pavement Cl. Sh. F/P. Ford axle opp. 1st tel. pole N. of conc. culvert headwall on E. side Cl. Sh. F/P. (1st culvert S. of Morse Rd.) 10.55' W. of tel. pole above desc. 18.64' N. of N.W. cor. of conc. culvert headwall on E. side of Cl. Sh. F/P. 21.40' N.E. of N.E. cor. of conc. culvert headwall on W. side of Cl. Sh. F/P.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 9

- 9 1 B. M. 175.
9 2 W. side of Cleveland Ave. about 132' S. of most southern rail of C.S.&H.Ry. in grass plot between S.W. and curb. 2.70' W. of W. curb of Cleveland Ave. 6.35' S. of tel. pole 41-C-35, 2nd S. of Ry. 26.41' N. and across S.W. from N.E. cor. of red brick bldg, H. V. Hocker Lumber Co. 0.35' E. of E. edge of W. S/W. of Cleveland Ave.
9 3 N.W. cor. of Cleveland Ave. and Bonham Ave., W. of W. S/W. of Cleveland Ave. 8.40' W. of W. curb of Cleveland Ave. 11.4' N. of N. curb of Bonham Ave. 16.78' S. of S.W. cor. of bottom step of conc. entr. walk to frame dwelling, 1365 Cleveland Ave. 17.20' N.E. of Fire Hydrant on N. side Bonham Ave. W. of Cleveland Ave.
9 4 S.E. cor. of Cleveland Ave. and 12th Ave. 8.50' E. of E. curb of Cleveland Ave. 11.30' S. of S. curb of 12th Ave. 13.85' N. of N.W. cor. bottom step of conc. entr. walk to No. 1492 Cleveland Ave. 33.05' W. of tel. pole No. 41-B-77, 1st E. of Cleveland Ave. on S. side of 12th Ave.
9 5 B. M. 177.
9 6 B. M. 178.
9 7 N. E. cor. Cleveland Ave. and 19th Ave. 5.75' E. of E. curb of Cleveland Ave. 0.28' S. of S. side of N. S/W. 19th Ave. 5.45' S.E. of tel. pole No. 33-D-130. 8.58' S.W. of iron pin lot cor., N.E. cor. 19th Ave. and Cleveland Ave.
9 8 B. M. 179.
9 9 B. M. 180.
9 10 S.E. cor. Cleveland Ave. and Duxberry Ave. 12.30' E. of E. curb of Cleveland Ave. 0.84' S. of S. curb of Duxberry Ave. 9.35' N.E. of tel. pole No. 33-D-3. 33.0' S. of Fire Hydrant on N. side Duxberry Ave. E. of Cleveland Ave.
9 11 N.E. cor. Cleveland Ave. and Cordell Ave. 0.58' W. of W. edge of E. S/W. of Cleveland Ave. 2.45' E. of E. curb of Cleveland Ave. 8.40' N. of N. curb line of Cordell Ave. 76.17' S. of 1st tel. pole N. of Cordell Ave. on E. side of Cleveland Ave.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 10

- 10/1 W. side of Woodland Ave., 20.4' E. of 5th tel. pole N. of 5th Ave. on W. side of Woodland Ave. 40.1' S.W. of 9" tel. pole on E. side of Woodland Ave. 134.9' N. W. of 9" tel. pole on E. side of Woodland Ave.
- 10/2 B. M. 55.
- 10/3 B. M. 56.
- 10/4 E. side of Woodland Ave., 18.6' W. of 8th tel. pole S. of 17th Ave. on E. side of Woodland Ave. 39.0' E. of W. fence of Woodland Ave. 50.4' S.E. of 12" sq. cor. post in fence on W. side of Woodland Ave.
- 10/5 B. M. 57.
- 10/6 B. M. N.E. cor. of Woodland Ave. and Holt Ave. 3.5' S.W. of 5" sq. prop. cor. post. 3.2' S.E. of 10" tel. pole on N.E. cor. of Woodland Ave. and Holt Ave.
- 10/7 E. side of Woodland Ave., 5.63' W. of 1st poplar tree N. of Holt Ave. on E. side of Woodland Ave. 44.5' W. of 8" elm tree in fence line on E. side of Woodland Ave. 40.1' E. of W. fence line of Woodland Ave.
- 10/8 W. side of Woodland Ave. in edge of pavement. 40.50' W. of 20" Oak tree about 4.0' E. of E. fence of Woodland Ave. 137.3' N.E. of N.W. cor. of the W. headwall of stone culvert.
- 10/9 B. M. 58.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 11

- 11/1 B. M. 49.
- 11/2 B. M. N. side of Leonard Ave. on Parkway of Wellington Blv'd. 8.80' N.E. of fire hydrant. 67.20' N.W. of tel. pole No. 42-D-122, 1st E. of Wellington Blv'd on S. side of Leonard. 15.30' S.E. of 4" tree farthest south of line of trees along W. side of Wellington Parkway.
- 11/3 N. side of Leonard Ave., on E. range line of frame dwelling No. 2152 Leonard. 12.25' S. of 5" tree on E. range line of house No. 2152 Leonard. 17.30' S.W. of tel. pole 1st E. of house No. 2125 Leonard on N. side. 42.50' N.W. of tel. pole No. 42-D-128, 1st W. of house No. 2152 Leonard on S. side.
- 11/4 N. side of Leonard Ave., Ford axle driven flush at edge of pavement S. of S.W. cor. of frame dwelling No. 2008 Leonard Ave. 39.0' N.W. of the W. of two hydro-transformer poles on S. side of Leonard. Pole No. 42-C-15. 22.5' E. of tel. pole 1st E. of No. 2008 Leonard Ave. on N. side. 21.63' S.W. of fire hydrant in front of No. 2008 Leonard. 39.7' S. of S.W. cor. of house No. 2008 Leonard Ave.
- 11/5 N. side Leonard Ave., about on line with E. edge of pavement Fifth Ave. Ford axle 40.10' N.W. of tel. pole No.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

42-C-7 on S.W. cor. Leonard and Fifth Ave. 14.15' W. by S. of tel. pole last W. of line of poles along N. side of Fifth Ave. 13.35' N. E. of tel. pole 1st W. of the last one described above.

11/6 B. M. 53.

11/7 S.E. cor. Fifth Ave. and Taylor Ave., Ford axle driven flush about 4' N. of edge of pavement on e. of E. sidewalk Taylor Ave. 3.4' E. of E. curb line Taylor Ave. 41.5' N. by W. of 36" tree on S.E. cor. Taylor and Fifth. 78.8' W. of tel. pole No. 50-A-77, 1st E. of Taylor Ave. on S. side of Fifth Ave., 47.8' S.E. of fire hydrant on N.W. cor. Taylor and Fifth.

11/8 B. M. 174.

11/9 B. M. 173.

11/10 Ford axle driven flush on N. edge of pavement about half-way between C.A. & C. Ry. and Atcheson Ave. F/P. 35.85' N.W. of tel. pole No. 49-B-28, 6th W. of Atcheson Ave. F/P. on S. side of Fifth Ave. 25.22' W. by S. of guy pole No. 49-B-29 across 5th Ave. from No. 49-B-28. 173.3' E. and across Fifth Ave. from tel. pole No. 49-B-27, 7th W. of Atcheson Ave. F/P on S. side of Fifth Ave.

11 11 Ford axle on N. edge of pavement Fifth Ave. about 300' W. of N. & W. Ry. 68.08' N. W. of tel. pole No. 49-B-14, 3rd W. of N. & W. Ry. 60.22' N.E. of tel. pole 49-B-13, 4th W. of Ry. 326.2' W. of gauge of W. rail of most westerly track of N. & W. Ry.

11/12 B. M. 172.

11/13 B. M. 171.

11/14 N. side of N. sidewalk Fifth Ave. and W. of W. curb of entrance to alley E. of No. 700 E. Fifth Ave. Ford axle 5.70' N. of N. curb line Fifth Ave. 16.86' E. of S.E. cor. bottom step of conc. entrance walk to frame dwelling No. 700 E. Fifth Ave. 17.05' S. of S.E. cor of stone foundation of No. 700 E. Fifth Ave. 26.06' W. of S.W. cor. bottom step of conc. entr. walk to No. 702 E. Fifth Ave.

11/15 B. M. 170.

11/16 S. side of S. sidewalk Fifth Ave. Ford axle about 2' E. of future E. curb line Fields Ave., 6.35' S. of S. curb Fifth Ave. 10.75' S.W. of tel pole No. 49-A-2, 1st E. of Fields Ave. on S. side of Fifth Ave. 38' E. of point on face of E. curb entrance to City Ice and Fuel Co. on S. line of S. sidewalk Fifth Ave. 41.35' W. and across sidewalk from fire hydrant on S. side of Fifth Ave.

11/17 S. side of S. sidewalk Fifth Ave., on E. curb line Grant Ave. 6.65' S. of S. curb of Fifth Ave. 6.65' S.W. of tel. pole 3 48-B-262 1st E. of Grant Ave., 7.52' N.W. of N.W. cor. bottom step of cone. entrance walk to Fifth Ave. Lumber Co. office (Frame 2s building).

11/18 B. M. 169.

11/19 B. M. 168.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 11 20 N.E. cor. High St. and Fifth Ave. Ford axle driven flush with block sidewalk. 3.1' S.W. of property corner I tube on N.E. cor. 1.24' W. of W. side of sidewalk joint on E. side of E. sidewalk High St. 10.29' E. of E. curb High St. 9.15' N. of N. curb Fifth Ave.
- 11 21 N.W. cor. Fifth Ave. and Dennison Ave. in grass plot between N. sidewalk and curb Fifth Ave. 3.55' N. of N. curb Fifth Ave. 14.6' W. of W. curb line Dennison Ave. 15.75' S.W. of 20" maple tree 1st N. of Fifth on W. side of Dennison. 45.6' E. of 18" poplar tree 1st W. of Dennison on N. side of Fifth.
- 11/22 B. M. 166.
- 11/23 B. M. 83.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 12

- 12 1 B. M. 82.
- 12 2 S.E. cor. Neil Ave. and King Ave. Ford axle on inside edge of sidewalk on curve. 7.9' E. of E. curb line Neil Ave. produced 11.7' S. of S. curb line King Ave. produced 26.46' N. and across sidewalk from iron trolley wire pole 1st S. of King Ave. on E. side Neil Ave.
- 12 3 N.W. cor. Neil Ave. and W. 8th Ave. Ford axle near E. edge of W. sidewalk Neil Ave. 6.2' W. of W. curb Neil Ave. 14.1 N. of N. curb W. Eighth Ave. 52.9' S. and across sidewalk from S.E. cor. of bottom step of conc. entr. walk to No. 1515 Neil Ave. 0.2' E. of E. edge sidewalk Neil Ave.
- 12 4 B. M. 80.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 13

- 13/1 S.W. cor. Fifth Ave. and Michigan Ave. Ford axle at intersection of inside edges of sidewalks 11.9' W. of W. curb Michigan Ave. 12.9' S. of S. curb Fifth Ave. 46.35' N. of N.E. cor. bottom step of conc. entr. walk to side of 2s frame dwelling No. 409 W. Fifth Ave. 13.15' E. of N.E. cor. bottom step of conc. entr. walk to front of No. 409 Fifth Ave.
- 13/2 S. side of Fifth Ave. opp. Tisdale St. Ford axle 7.35' S. of S. curb Fifth Ave. 46.56' E. of tel. pole 1st W. of Tisdale St. on S. side Fifth Ave. 86.26' W. and across sidewalk from N.W. cor. bottom step of conc. entr. walk to 2s conc. block dwelling No. 593 W. Fifth Ave.
- 13 3 B. M. 165.
- 13 4 S. side Fifth Ave. bet. N. and S. bound tracks Hocking Valley Ry. 4.25' W. of gauge of W. rail of N. bound track 4.59' E. of gauge of E. rail of S. bound track. 6.1' S. of S

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

13/5 B. M. 249. curb line Fifth Ave. 29.04' E. by N. of 6" Wood cor. fence post on N.E. cor. of yard Burns Coal & Supply Co.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 14

- 14 1 B. M. 164.
14 2 S.W. cor. Fifth Ave. and Norton St. Ford axle in grass plot bet. sidewalk and curb Fifth Ave. 2.7' S. of S. curb Fifth Ave. 1.85' S.W. of tel. pole on S.W. cor. Fifth Ave. and Norton St. 6.55' W. of W. curb line Norton St.
- 14/3 B. M. 163.
14/4 B. M. 162.
14/5 N. side of Fifth Ave., opp. Sunrise Ave. Ford axle on S. edge of N. sidewalk Fifth Ave. 0.55' E. of face of E. curb at turn in of drive to No. 1316 W. Fifth Ave. 43.25' W. of tel. pole 2nd W. of Northwest Blvd. on N. side Fifth Ave. 5.04' S. of N. edge N. sidewalk Fifth Ave. 5.2' N. of N. curb line Fifth Ave.
- 14/6 ✓ N.E. cor. Fifth Ave. and Grandview Ave. Ford axle at intersection of N. edge of N. sidewalk Fifth Ave., and E. edge of E. curb Grandview Ave. N. of Fifth Ave. 33.41' W. by S. of S.W. cor bottom step of conc. entr. walk to 2s frame dwelling No. 1416 W. Fifth Ave. 42.64' E. by S. of tel. pole No. 1390, 1st W. of Grandview Ave. on N. side Fifth Ave. 10.0' N. of N. curb Fifth Ave. 0.45' E. of face of E. curb at turn into Grandview Ave.
- 14/7 B. M. 161.
14/8 B. M. 160.
14. 9 N. side W. Fifth Ave. opp. Lincoln Rd. Ford axle in grass plot between sidewalk and curb Fifth Ave. on range line of E. edge of W. sidewalk Lincoln Rd. 2.25' N. of N. curb Fifth Ave. 4.25' S. of S. edge of N. sidewalk Fifth Ave. 34.9' E. of E. sidewalk Andover Rd.
- 14.10 B. M. 159.
14/11 ✓ S.E. cor. Arlington and Devon Rd. in grass plot between sidewalk and P/L. Ford axle 1.05' E. of E. edge sidewalk Arlington. 1.05' S. of S. sidewalk Devon Rd. 22.1' E. of E. curb Arlington Ave. 14.0' S. of S. curb Devon Rd.
- 14.12 S.E. cor. Arlington and Tremont Rd. Ford axle in grass plot between sidewalk and curb. 0.95' W. of W. edge E. sidewalk Arlington Ave. 1.0' N. of N. edge S. sidewalk Tremont. 15.55' E. of E. curb Arlington Ave. 20.3' S. of N.W. cor. C. I. curb inlet at S.E. intersection Arlington and Tremont.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 14/13 S.E. cor. Arlington Ave. and Edgemont Rd. Ford axle driven in I. P. P/L. cor. 1.3' E. of E. edge E. sidewalk Arlington Ave. 1.1' S. of S. edge S. sidewalk Edgemont. 22.1' E. of E. curb Arlington Ave. 14.85' S. of S. curb Edgemont Rd.
- 14/14 B. M. 227.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 15

- 15 1 N.W. cor. Tremont and Waltham Rds. Ford axle in grass plot bet. sidewalk and curb W. side of Tremont. 2.0' E. of E. edge of W. sidewalk Tremont Rd. 18.2' W. of W. curb Tremont Rd. 30.5' N. of N. edge N. sidewalk Waltham Rd. 26.3' S.E. of S.E. cor. conc. step, entrance walk to 2sb dwelling No. 2001 W. side Tremont Rd.
- 15 2 W. side Tremont Rd. at summit N. of Guilford Rd. Ford axle in grass plot between sidewalk and curb W. side Tremont about in range of lot line between No. 2081 and 2087. 2.0' E. of E. edge W. sidewalk Tremont Rd. 8.5' E. of I. P. lot cor. W. line Tremont Rd. between No. 2081 and 2087. 17.9' W. of W. edge W. curb Tremont Rd. 34.45' N. of N. edge conc. entrance walk to 1½s stone dwelling No. 2081 Tremont Rd. 39.5' S. of S. edge conc. entrance walk to 1½s b dwelling No. 2087 Tremont Rd.
- 15 3 Tremont and Westover Rds. In W. sidewalk space Tremont in range N. sidewalk Westover Rd. Ford axle driven flush. 5.15' E. of tack in lot stake 21/20 W. side Tremont Rd. 20.9' W. of W. edge W. curb Tremont Rd. 52.8' N.E. of N.E. cor. 2sb dwelling No. 2283 Tremont Rd. 36.7' N.W. of N.E. cor. C. I. inlet W. side Tremont Rd. about range S. curb Westover.
- 15 4 W. side Tremont Rd. about 200' S. of Arlington Ave. Ford axle in W. sidewalk space Tremont Rd. 14.55' W. of W. edge W. curb Tremont Rd. 45.25' N.W. of N. end W. face, base iron lamp post E. side Tremont 1st S. of Arlington Ave. 37.15' E. of 2" maple tree on W. P/L Tremont Rd. 4th tree S. of LP on W. side. 143.9' S. of W. end S. face, base of iron lamp post W. side Tremont, 1st S. of Arlington Ave.
- 15/5 B. M. 229.
- 15/6 B. M. 230.
- 15/7 W. side Worthington and Georgesville Rd. at PT of curve to Rt in W. and G. Rd. Ford axle driven flush in shoulder about 1' W. of W. edge macadam pavement. 38.95' S.W. of W. face T.P. No. 7821 E. side Rd. 19.95' S. of S. face TP No. 6625 W. side Rd. 43.7' S.E. of S.E. cor. 2f dwelling W. side Rd. Pt. is in line with range S. eaves 1½ f dwelling E side W. and G. Rd. at Pt of curve to Rt.
- 15/8 B. M. 231.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

15/9 B. M. 232.

15/10 E. side Worthington and Georgesville Rd. at 2sf dwelling in fruit grove on E. side and opposite farm gate on W. Ford axle driven flush with surface. 3.9' N.W. of cor. FP at junction wire and board fence 39.95' S. of S. face MB post MB258, G. C. Galbraith 17.8' S. of S. range 2f dwelling on E. side W.&G. Rd. 46.15' E. of E. face wood TP No. 6591-L 9.9' N. of N. face 24" Ash in E. fence line Rd.

15 11 B. M. 233.

15 12 B. M. 234.

15 13 W. side Worthington and Georgesville Rd. opp. 2-story conc. block dwelling on W. side of road. Ford axle driven flush in small depression at foot of bank west side Rd. 0.4' S. of S. range 2 conc. block dwelling W. side Rd. 49.3' N. of N. face wood TP No. 6562, W. side Rd. 64.45' S.E. of N.E. cor. 2 conc. block on W. side Rd. 47.9' S. of S. face at base small twin fruit tree in yard of 2 conc. block dwelling W. side Rd.

DESCRIPTION OF TRAVERSE STATIONS

LINE No. 16

16/1 B. M. 245.

16/2 ✓ Hess Rd. and Hocking Valley Ry. Ford axle driven flush with subgrade of Ry. in center bet. tracks H.V. Ry., 5.8' N. of range S. fence line Hess Rd. E. from H.V. Ry. crossing, 4.25' W. of gauge west rail N/B track, 4.1' E. of east rail S/B track, 38.9' S.E. of S.E. cor. Ry. crossing sign post at N.W. cor. Hess Rd. and H.V. Ry.

16/3 B. M. 243.

16/4 B. M. 242.

16/5 B. M. 238.

16/6 W. side Kennedy Pike about 70 Ft. S. of culvert under pike N. from Ackerman Rd. Ford axle driven flush in west shoulder at top ditch bank. 63.05' S. of S. face 1st wood tel. pole on E. side Pike S. from culvert. 84.05' S.E. of S.W. cor. conc. culvert headwall, W. side Kennedy Pike. 15.8' S.E. of S.E. face 4" Elm in W. fence line of Pike, 2nd tree S. from culvert 23.05' N.E. of N.E. face 8" Elm in W. fence line of Pike, 3rd tree S. from culvert.

16/7 B. M. 237.

16/8 B. M. 236.

16/9 W. side Kennedy Pike at 1st 2s frame dwelling S. of Worthington and Georgesville Rd. Ford axle driven flush on W. edge of macadam paving in N. range 2s frame dwelling on W. side pike. 52.35' E. of N.E. cor. foundation wall 2s frame dwelling W. side Pike. 16.2' N.E. of N.E. face 12" Elm in W. fence line. 18.65' S.E. of S.E. face 8" Maple in W. fence line.

16/10 W. side Kennedy Pike at summit S. from intersection of

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

Worthington and Georgesville Rd. Ford axle driven flush at W. edge macadam paving. 29.25' W. of E. fence line Kennedy Pk. 35.1' N.W. of W. face 8th wood T.P.S. of W. & G. Rd. on E. side Kennedy Pike. 20.7' N.E. of N.E. face 6" Elm in W. fence line Kennedy Pike opp. 8th T.P.S. from W & G Rd. on E. side. 11.0' S. of range line 8th T.P. on E. side Kennedy Pike S. from W & G Rd. and center cupola Medary School.

16/11 B. M. 235.

16/12 B. M. 264.

16/13 W. side Olentangy F/P. Ford axle about 1' E. of W. edge of pavement opp. 7th tel. pole N. of B. M. No. 264 (desc. above) on E. side of road. 23.28' W. of 7th tel. pole last desc. 15.2' E. of W. fence line of Olentangy F/P. 37.5' S. by E. of 20" Elm tree 1st N. of 7th tel. pole above desc. on opp. side of road. 35.1' N. by E. of 5" tree on W. fence line about 30' S. of a point opp. above desc. tel. pole.

16/14 B. M. 265.

16/15 B. M. 266.

16/16 E. side Olentangy F/P. opp. tel. pole No. 6514. 2nd S. of 250' culvert guard rail on E. side. Ford axle in E. edge of pavement 14.9' W. of tel. pole No. 6514. 98.8' N.E. of 9" Elm tree on W. side of road about opp. third tel. pole (No. 6514) S. of wood guard rail. 43.40' S. of S.W. cor. of conc. culvert headwall on E. side of road. 43.35' S.E. of S.E. cor. conc. culvert headwall on W. side of road.

16/17 B. M. 267.

16/18 B. M. 268.

16/19 S.W. cor. Henderson Rd. and Nobile Dr. Ford axle on S. edge of pavement. 13.9' N. of N.W. cor. of 24" sq. conc. cor. post on S.W. cor. 53.28' N.W. of N.W. cor. of similar conc. cor. post on S.E. cor. 49.0' S. of S.E. cor. of conc. porch step of 2s frame dwelling on N. side of road 16.0' E. of E. range line of 2s frame dwelling on S.W. cor.

16/20 N. side Henderson Rd. on range of E. fence Hocking Valley Ry. Ford axle in edge of pavement. 33.69' E. of gauge of E. rail of E. track Hocking Valley Ry. 30.9' S. of tel. pole on N.E. cor. Henderson Rd. and Hocking Valley Ry. 42.90' N.E. of switch standard on S.E. cor. of road and Ry. 78.2' N.W. of 16" tall elm tree, 1st E. of Ry. on S. side of road.

16/21 B. M. 269.

16/22 B. M. 270.

16/23 S. side Henderson Rd. near W. end of Olentangy River bridge. Ford axle on S. edge of pavement. 1.3' N. of S. curb line of bridge. 4.1' W. of N.S. range of curb on turn at W. end of bridge. S. side of road. 21.75' S. by W. of S.W. cor. curb turn in on N. side of road.

16/24 B. M. 272.

16/25 B. M. 273.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 5

- 5/1 I. P. W. side Beulah Rd. near E. edge of W. sidewalk Beulah Rd. about opposite future S. sidewalk Arcadia Ave., Ford axle 9.62' S. and across sidewalk from S.E. corner of step in concrete entrance walk to 2569 Beulah Rd., 8.88' N. and across sidewalk from N.E. corner of step in concrete entrance walk to 2567 Beulah Rd., 19.43' S. by W. of tel. pole 32-B-383 carrying street light and opposite Arcadia Ave.
- 5/2 I. P. S.E. corner Beulah Rd. and Indianola Drive about 3' N.W. of property corner, 59.7' E. of S.E. corner of bottom step of concrete entrance walk to 2659 Beulah Rd., 2.70' N.W. of property corner stake S.E. corner, 48.2' S. of property sign post N.E. corner, 54.0' E. by S. of tel. pole 24-D-158 opposite Indianola Dr.
- 5/3 B. M. W. side of Beulah Rd. about opposite future sidewalk Edgar Pl., 5.32' S. by E. of hydro pole 24-D-155 opposite Edgar Pl., 8.10' E. of E. edge of W. sidewalk Beulah Rd., 35.55' N.E. of S.E. corner of bottom stone step of entrance to porch at 2723 Beulah Rd., 47.18' W. of iron property corner tube on S.E. corner Beulah Rd. and Edgar Pl.
- 5/4 I. P. E. side Beulah Rd. about 800' N. of Weber Rd., Ford axle at side of road, 95.0' S.E. of tel. pole 24-D-135, 7th N. of Weber Rd. on W. side Beulah, 55.5' N.E. of tel. pole 24-D-136, 6th N. of Weber Rd. on W. side of Beulah, 42.4' E. of W. fence line Beulah Rd.
- 5/5 I. P. E. side Beulah Rd. opposite a point about midway bet. 6th and 7th tel. pole N. of traverse point 5/4, 79.0' S.E. of tel. pole 24-B-59, 13th pole N. of Weber Rd. on W. side Beulah, 42.7' E. of W. fence line Beulah Rd., 71.5' N.E. of tel. pole 24-B-60, 12th N. of Weber Rd. on W. side Beulah Rd.
- 5/6 I. P. E. side Beulah Rd. opposite a point bet. 6th and 7th tel. pole N. of traverse point 5/5, 83.3' S.E. of tel. pole 24-B-53, 7th S. of Oakland Park Ave. on W. side of Beulah, 65.7' N.E. of tel. pole 24-B-54, 8th S. of Oakland Park Ave. on W. side Beulah, 44.4' E. of W. fence line Beulah Rd., 14.8' W. of E. fence line Beulah Rd.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 6

- 6/1 I. P. W. side of McGuffey Ave. about 1' S. of N. property line Briarwood Ave. Ford axle in wedge of pavement 80.2' S. by E. of 14" beech tree, 1st N. of Briarwood Ave. on W. side McGuffey. 51.6' N. by E. of 2" square wooden prop. cor. stake S.W. cor. Briarwood and McGuffey. 21.7" E. of similar prop. cor. stake on N.W. cor. Briarwood and McGuffey. 25.4' W. of E. fence line McGuffey Ave.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 6/2 I. P. W. side of McGuffey Ave. about 2' S. of N. prop. line Minnesota Ave., Ford axle in edge of pavement. 23.0' N.E. of water curb box in front of Lot No. 285 McGuffey Ave. opp. Minnesota. 75.2' S.W. of sidewalk cor. of one story frame dwelling No. 2696 McGuffey Ave. 120.8' N.W. of N.W. cor. 18" square R.B. veranda post N.W. cor. of Veranda on two story frame house S.E. cor. Minnesota and McGuffey.
- 6/3 B. M. N.W. cor. McGuffey and Como Ave. 4.49' S.E. of N.W. prop. cor. stake. 40.97' N. by E. of 16" elm tree on S.W. cor. 38.91' E. of Hydro guy pole No. 25-A-59. 1st W. McGuffey Ave. on N. side Como. 101.96' S.W. of telephone pole—1st N. of Como Ave. on E. side of McGuffey Ave.
- 6/4 I. P. N.W. cor. McGuffey Ave. and Weldon Ave. Ford axle in edge of pavement McGuffey Ave. 25.58' E. of iron prop. cor. tube on N.W. cor. 53.2' N. by E. of iron prop. cor. tube on S.W. cor. 19.9' W. by N. of telephone pole opp. Weldon ave. on E. side of McGuffey ave.
- 6 5 I. P. N.W. cor. McGuffey Ave. and Mecca Rd. 24.52' E. of iron prop. cor. tube N.W. cor. 53.40' N.E. of iron prop. cor. tube S.W. cor. 46.05' S.W. of telephone pole, 1st N. of Mecca Rd. on E. side McGuffey Ave.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 7

- 7/1 I. P. E. edge of E. curb Cleveland Ave. on bend about 250' N. Dunbar Dr. 18.12' E. of gauge of E. rail of Interurban Ry. Ford axle flush with curb 34.9' S. by W. of tel. pole. 2nd N. of Dunbar Dr. on E. side of Cleveland Ave. 91.8' N. of tel. pole. 1st N. of Dunbar.
- 7/2 I. P. E. edge of E. curb Cleveland Ave. about 15' S. of line of tel poles on S. side of Huy Rd. 1.65' S.W. of 16" tel. pole on Church lot S.W. cor. 18.2' E. of gauge E. rail Interurban Ry. 23.20' S. of S.W. cor. entr. walk to R. B. church opp. Huy Rd.
- 7/3 B. M. S.E. cor. Cleveland Ave. and Long Rd. B.P. in con. mon. 4.7' E. of E. curb of Cleveland Ave. 2.3' S. of S. curb return of Long Rd. 17.2' N. of tel. pole. 19.2' N.W. of 24" twn tree. B.M. 186.
- 7/4 B. M. 187.
- 7/5 I. P. S.W. cor. Cleveland and Elmore Ave. W. inside cor. of sidewalk lines. 10.00' W. of W. curb Cleveland Ave. 0.75' N.E. of prop. cor. tube on S.W. cor. Cleveland and Elmore. 7.90' S.E. of 4" tree 1st W. of Cleveland Ave. on S. side of Elmore.
- 7/6 B. M. 188.
- 7/7 B. M. 189.
- 7/8 I. P. E. side Cleveland Ave. on S. sidewalk line Ormond Ave. 10.15' E. of E. curb Cleveland Ave. 59.9' S. and across sidewalk from tel. pole 1st N. of Ormond Ave. on E. side of

For description of traverse points, located on bench marks, see bench mark descriptions.

- (carrying street light) on S.E. cor. Sunbury and Cols. and Johnstown F/P. 20.78' N.W. of screw head in forked tree on S. side of road at bend (screw about 18" above ground). 70.95' S.E. of Hydro pole on S.W. cor. of Leonard Ave. and Sunbury Pike.
- 19/2 N. side of Leonard Ave. on E. sidewalk line of Nelson Rd. 10.15' E. of 6" conc. sign post on N. side of Leonard E. of entrance drive to St. Mary's School. 49.35' N. of N.E. corner of catch basin in curb on S.E. corner Leonard and Nelson Rd. 81.1' W. of tel. pole 1st E. of entrance drive to St. Mary's School on N. side of Leonard Ave.
- 19/3 E. of future E. sidewalk Nelson Rd. about on N. fence line of T. & O. C. Ry. 1.85' W. of corner fence post N.E. corner Nelson Rd. and T. & O. C. Ry. 9.5' E. of E. curb Nelson Rd. 29.4' N. of gauge of N. rail of T. & O. C. Ry.
- 19/4 S.W. corner Nelson Rd. and Fifth Ave. inside of sidewalk lines. Ford axle 7.9' S. of S. curb Fifth Ave. 16.45' W. of N.W. cor. of catch basin in curb on S.W. corner Nelson and Fifth. 74.0' E. and across from tel. pole No. 42-D-39 on N. edge of S. sidewalk Fifth Ave. 1st W. of Nelson Rd. 9.0' N.E. of 9" Maple tree on corner of lawn S.W. corner Nelson and Fifth Ave.
- 19/5 About 0.3' E. of E. edge E. sidewalk Nelson Rd. about on N. sidewalk line Willshire Ave. Ford axle driven to below sidewalk level 5.65' E. of E. curb Nelson Rd. 23.1' N. and across from tel. pole No. 50-B-111 on W. edge of E. sidewalk Nelson Rd. opposite Willshire Ave. 117.2' S. and across sidewalk from tel. pole No. 50-B-112 1st N. of Willshire Ave. on E. side of Nelson Rd. 4.6' N. of N. curb line Willshire Ave.
- 19/6 E. side Nelson Rd. about 300' S. of Ry. subway. 1.45' E. of E. curb Nelson Rd. 63.9' N. of tel. pole 3rd tall regular 12" pole S. of B. & O. Ry. 74.9' S. of S.W. corner of catch basin, 1st S. of Ry. on E. side Nelson Rd.
- 19/7 N.W. corner Nelson Rd. and Maryland Ave. 1.6' N. of N. curb Maryland Ave. 15.7' W. of W. curb line Nelson Rd. 17.2' S. of steel corner fence post N.W. corner Nelson and Maryland.
- 19/8 B. M. 47.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 20

- 20/1 B. M. Ford axle driven in triangle between N. and S. Greenway Drives about 60' N. of curb return to N. line of S. Greenway. 4.15' W. of face of curb. 331.89' N.E. of 10" Linden tree. 26.05' S.E. of 8" Elm.
- 20/2 Ford axle driven on W. side of Nelson Rd. at driveway between houses No. 97 and 105 N. Nelson Rd. 3.83' S. of tel.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 20, 3 pole, 44.64' S.W. of tel. pole No. 50-D-59. 38.45' N.E. of N.E. corner house No. 97 Nelson.
Ford axle on S. side E. Broad St. between sidewalk and curb, approximately on line of west line Nelson Rd. extended from N. 2.2' N. of N. line sidewalk 37.64' W. of tel. pole on curb at S.W. corner Broad and Nelson Rd. 26.28' E. of tel. pole No. 1881 S. curb Broad.
- 20/4 Ford axle in S. parkway of E. Broad St. opposite St. Charles School about 6' W. of W. curb return to parallel driveway. 3.22' S.W. of electric light pole 19.7' W. of 2" Elm 19.2' N. of largest of two tel. poles No. 2015. 51.95' S. of face of S. curb on Broad St.
- 20, 5 Ford axle driven in south grass plot on E. Broad St. at Parkview approximately on W. line of Parkview extended from the N. 2.6' S. of 12" tree. 22.88' N.E. of tel. pole. 32.68' N.W. of center of catch basin on S.W. corner of Parkview and Broad.
- 20/6 Ford axle at S.W. cor. E. Broad St. and Drexel Ave. 15.87' N. of tel. pole No. 2395. 49.4' W. of state highway post on S.E. cor. 64.68' S. of tel. pole on N. side of street marked No. 45 with red paint.
- 20/7 Ford axle driven between sidewalk and curb on S.E. cor. E. Broad St. and Cassady Rd. 7.25' S.E. of N.W. corner catch basin. 6.55' S. of face of S. curb Broad St. 20.5' W. of 18" poplar tree. 17.56' N. of tel. pole No. 51-C-56.
- 20/8 Ford axle on S.W. cor. Broad St. and Remington Rd. on inside edge of curb. 36.05' S.W. of street sign pole on S.E. cor. 33.62' N.W. of 6" Honey Locust tree on E. side Remington Rd. 1st S. of Broad St. 19.37' N. of 4" Maple tree on S.W. corner 48.93' E. of 9" tel. pole 1st W. of Remington Rd. on S. side of Broad St.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 21

- 21, 1
21, 2 Ford axle driven on edge of R.R. bank approx. 700' E. of E. base.
- 21, 3 Ford axle driven in hedgerow line on S. edge of cornfield (1926) approximately 45.0' E. of fence line running S. 18.6' E. of lone tree at S. end of cornfield. About 15' W. of line of tip of water tank at E. end of Sanitary Earthenware Co. and L of the smoke stack of the Ralston Steel Car Co.
- 21, 4 Ford axle driven in N.E. cor. of hayfield about 800' N. of B.M. at S.E. cor. Maryland and Gould. Near S.W. cor. pig lot 11.05' S.W. of S.E. cor. pig lot 9.4' E. of 22" Elm. 36.6' N.E. of 26" elm.
- 21, 5 Located at the S.E. cor. of Gould Rd. and Maryland Ave. 1.82' S.E. of property pin 30.8' S. of 18" Maple tree across

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 21/6 fence line running E. and W. 23.1' E. of 20" Maple on E. side of ditch 34.75' N.E. of 12" tree on E. side of ditch. Ford axle driven at S.E. cor. Gould Rd. and Denver Ave. about 18" S.E. of street sign. 21.87' N.E. of face of 14" Elm tree on E. side of ditch on E. side of traveled roadway of Gould. 26.75' S.E. of face of 18" Elm at S. end of old wagon bridge across ditch. 110.9' N.W. of face of 24" Oak in open field.
- 21/7 Ford axle driven in N. side E. Broad St. about 1' S. of line of S. face of Blvd. lamps and approximately in line with E. property line of Gould Rd. extended about 6' N. of N. edge of pavement. 2.9' S.W. of S.W. cor. concrete base of Bexley village limit sign. 68.92' N. of property pin at S.E. cor. Broad and Gould Rd. 65.42' W. of top of fire hydrant on W. side Gould Rd.
- 21/8 Ford axle in E. Broad St. approximately opposite center line Roosevelt Ave. (Hartley Rd.). About 18" N. of N. curb line of Broad St. extended E. 44.61' E. of tel. pole painted with State Highway sign. (No. 51-C-181). 54.82' N.E. of lamp post at S.W. cor. Broad and Roosevelt. 47.82' N.W. of largest of two tel. poles near old fence cor. at S.E. cor. of Broad and Roosevelt.
- 21/9 Ford axle at S. E. cor. of Powell Ave. and Roosevelt Ave., about 1' west of W. line of sidewalk of Roosevelt. 8.93' S. of 8" catalpa tree 63.4' S. of top of fire hydrant across Powell Ave. 33.75' S.W. of 2" tree planted in grass plot S. side Powell, 43.68' E. of S.W. property corner.
- 21/10 Ford axle driven at S.E. cor. of intersection of 2nd street N. of station 21/11 with Roosevelt. 1.15' S.E. of S.E. property corner 6.23' W. of reference stake 6.46' N. of reference stake. 50.35' S.E. of tap of fire hydrant painted white.
- 21/11 Ford axle about 800' N. of station 21/12 on N.E. corner of second street N. of station 21/12 about 3' E. of old fence line of N.E. property corner. 5.8' W. of stake marked reference. 50.57' S.E. of 36" Oak tree. 78.95' S.E. of 18" Hickory tree.
- 21/12 S.E. cor. Sheriden and Roosevelt. In open field 112.1' N.E. of 30" Oak tree with board nailed on it in horizontal position in form of steps. 0.77' E. of piece of reinforcing steel marking S.E. corner of street intersection. 11.57' N. of piece of reinforcing steel marking point of reverse curve 5.89' W. of 2" Oak stake marked reference.
- 21/13 B. M. at S.E. corner of Main St. and Roosevelt Ave., approximately 1' W. of W. sidewalk line of Roosevelt. 1' S. of S. sidewalk line of Main St. 10.71' N.E. of center of fire hydrant. 18.95' N.W. of 10" Catalpa tree in lawn of house No. 2673 E. Main. 54.97' S. of S. rail of car track across street.
- 21/14 B. M. At S.W. corner of Main St. and Chelsea Rd. 0.84' N.E. of S.W. property pin 8.06' N.W. of 8" Catalpa tree 13.97' N.E. of 5" Catalpa tree.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 21 15 Ford axle driven in grass plot between sidewalk and curb on Mound St. at S.W. corner Chelsea Rd. from green shingle house, No. 750 Chelsea Rd. 5.69' N. of S.W. property pin. 7.94' E. of 8" Catalpa tree. 11.05' S.W. of N. corner of catch basin 41.72' N.W. of fire hydrant.
- 21 16 Ford axle driven in grass plot between curb and sidewalk on Chelsea Rd. at N.W. corner Chelsea Rd. and Astor St. 5.25' S.E. of I. tube marking N.W. corner of street. 35.76' S.W. of top of fire hydrant. 67.16' N.W. of 10" Catalpa tree at S.E. corner street set between curb and sidewalk. 53.32' N.E. of tel. pole No. 67A100.
- 21 17 B. M. N.W. corner Chelsea Rd. and Charles St. about 40' N. of first row of trees running E. and W. and North of Livingston Ave. 7.05' S.W. of 12" Catalpa tree 0.94' S.E. of largest of two iron tubes marking N.W. corner Chelsea and Charles. 11.27' N.W. of S.E. corner catch basin. 40.73' N. E. of third tree W. of Chelsea Rd.
- 21 18 B. M. Ford axle driven about 2' off pavement S. side E. Livingston Ave., approximately in line with W. line Chelsea Ave. extended. 26.49' S.E. of 24" Sycamore tree. 37.62' N.E. of 16" maple. 54.97' N.W. of tel. pole. 65.34' S.W. of top of fire hydrant. (Note. This is marked Charles St. but is in fact Chelsea Rd.) Line runs north from here.
- 21 19 Ford axle driven on S. side E. Livingston Ave., about 2' S. of pavement in edge of grass. Approximately on W. curb line of Vernon Rd. extended 14.05' N.W. of tel. pole. 60.36' S.W. of center of stem in fire hydrant. 12.15' N.E. of steel fence post which is 2nd fire plug W. of tel. pole approximately in center line Vernon Rd.
- 21 20 On S. side E. Livingston Ave., approximately opposite W. curb line Euclaire Ave. extended. 3.9' N.E. of tel. pole 67A44. 4.15' N.W. of tel. pole. 54.7' S.W. of street stand approximately 8' S. of S. edge of pavement. 11.55' S.E. of Point
- 21 22 Ford axle in N. edge of pavement on Livingston Ave., approximately 100' W. of Sheriden Ave. 24.03' S.E. of 2 Maple. 8.46' S.W. of center of manhole. 25.06' N. of tel. pole on S. side of Rd.
- 21 23 Ford axle on N. side Livingston Ave. on E. end of Bridge over Alum Creek about 12' E. of E. bridge seat and approximately 2' N. of pavement. 13.25' E. of X mark in top stone of N.E. wing wall of bridge. 23.9' N. of tel. pole 27.43' S.W. of 30" Elm tree.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 22

- 22 1 B. M. 15.
 22 2 B. M. 16.
 22 3 B. M. 17.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 22/4 S. side Livingston Ave. on line with fence to S. on E. side of N. & W. Ry. Ford axle in S. edge of pavement. 20.48' N. of fence post at N. end of fence to S. 47.26' E. of gauge of E. rail of N. & W. Ry. N. bound track. 46.85' S. by W. of S.W. corner of 2 story red brick store building on N.E. corner Livingston Ave. and N. & W. Ry. 7.84' W. by N. of hydro pole No. 66D71, 1st E. of N. & W. Ry. on S. side of Livingston Ave.
- 22/5 B. M. 19.
22/6 E. side Kilgore Rd. opposite hydro pole No. 66D83 5th S. of Livingston Ave. on E. side Kilgore Rd. Ford axle (with wheel) in E. edge of pavement. 18.64' W. of hydro pole No. 66D83. 30.24' N.W. of center 2" square stake driven for reference. 23' S. of hydro pole No. 66D83. 31.66' S.W. of center of 2" square stake driven for reference. 25th N. of hydro pole No. 66D83. Note: could not find old point S.W. of hydro pole. Set new Ford axle with wheel at top.
- 22 7 W. side Kilgore Rd. at 1st bend S. of Livingston Ave. Ford axle with wheel on top on W. edge of pavement. 9.07' E. of 18" Elm tree on W. side of road at bend. 48.61' N.W. of tel. and hydro pole No. 66D91 last on E. side of road going south. 66.45' N. by E. of E. standard of Moon Motors sign post on W. side of road at bend. Caution: do not use old point set on old pavement. New point has wheel on top and is about 1' above and 4' S. of old point.
- 22/8 E. side Kilgore Rd. at bend just N. of concrete culvert. Ford axle on E. edge of pavement opposite tel. and hydro pole No. 66D100. 6.11' W. of tel. and hydro guy pole on E. side of road at bend No. 66D100. 51.41' E. of tel. and hydro pole No. 66D99 2nd N. of culvert on W. side of road. 19.14' N.W. of 24" Elm tree on E. side of road.
- 22 9 W. side Kilgore Rd. on bend just S. of concrete culvert. Ford axle 13.4' E. by S. of railroad spike in hydro pole No. 66D103 on S.W. corner with drive to farm house. 38.55' S.W. of mail box post on W. side of road at bend.
- 22/10 B. M. 21.
22/11 B. M. 22.
22/12 Inside of W. entrance to Franklin County Infirmary. Ford axle on E. side of entrance drive. 5.1' N. of iron gate post. E. side of entrance. 15.82' N.E. of iron gate post on W. side of entrance.
- 22 13 E. side of Moler Rd. 300' S. of N. & W. Ry. crossing. Ford axle in E. edge of pavement. 17.04' W. of gauge of W. rail of W. track N. & W. Ry. 91.5' N. by E. of tel. pole 4th S. of N. & W. crossing on E. side Moler Rd. 40.24' S.W. of tel. pole 3rd S. of bend in road to N. & W. crossing on W. side Moler Rd. 21.9' E. of W. fence Moler Rd.
- 22/14 S.E. corner of bend to N. in Moler Rd. Ford axle with wheel driven slightly below surface. 24.77' S.E. of corner fence post on N.W. corner. 9.73' N.W. of telephone guy

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 21/15 Ford axle driven in grass plot between sidewalk and curb on Mound St. at S.W. corner Chelsea Rd. from green shingle house, No. 750 Chelsea Rd. 5.69' N. of S.W. property pin. 7.94' E. of 8" Catalpa tree. 11.05' S.W. of N. corner of catch basin 41.72' N.W. of fire hydrant.
- 21/16 Ford axle driven in grass plot between curb and sidewalk on Chelsea Rd. at N.W. corner Chelsea Rd. and Astor St. 5.25' S.E. of I. tube marking N.W. corner of street. 35.76' S.W. of top of fire hydrant. 67.16' N.W. of 10" Catalpa tree at S.E. corner street set between curb and sidewalk. 53.32' N.E. of tel. pole No. 67A100.
- 21/17 B. M. N.W. corner Chelsea Rd. and Charles St. about 40' N. of first row of trees running E. and W. and North of Livingston Ave. 7.05' S.W. of 12" Catalpa tree 0.94' S.E. of largest of two iron tubes marking N.W. corner Chelsea and Charles. 11.27' N.W. of S.E. corner catch basin. 40.73' N. E. of third tree W. of Chelsea Rd.
- 21/18 B. M. Ford axle driven about 2' off pavement S. side E. Livingston Ave., approximately in line with W. line Chelsea Ave. extended. 26.49' S.E. of 24" Sycamore tree. 37.62' N.E. of 16" maple. 54.97' N.W. of tel. pole. 65.34' S.W. of top of fire hydrant. (Note. This is marked Charles St. but is in fact Chelsea Rd.) Line runs north from here.
- 21/19 Ford axle driven on S. side E. Livingston Ave., about 2' S. of pavement in edge of grass. Approximately on W. curb line of Vernon Rd. extended 14.05' N.W. of tel. pole. 60.36' S.W. of center of stem in fire hydrant. 12.15' N.E. of steel fence post which is 2nd fire plug W. of tel. pole approximately in center line Vernon Rd.
- 21/21 B. M. N. W. cor. E. Livingston and College Aves. 9.55' S.E. of nail in old Locust tree. 6.25' N. of nail in guy pole. 11.5' S.W. of Blvd. lamp. 7.85' S. of S.W. cor. sidewalk. Point is approximately on W. property line of College Ave. approximately 100' W. of S.W. corner of College Ave. Maple. 8.46' S.W. of center of manhole. 25.06' N. of 10" pole, on S. side of Rd.
- 21/23 Ford axle on N. side Livingston Ave. on E. end of Bridge over Alum Creek about 12' E. of E. bridge seat and approximately 2' N. of pavement. 13.25' E. of X mark in top stone of N.E. wing wall of bridge. 23.9' N. of tel. pole 27.43' S.W. of 30" Elm tree.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 22

- 22 1 B. M. 15.
 22 2 B. M. 16.
 22 3 B. M. 17.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 22/4 S. side Livingston Ave. on line with fence to S. on E. side of N. & W. Ry. Ford axle in S. edge of pavement. 20.48' N. of fence post at N. end of fence to S. 47.26' E. of gauge of E. rail of N. & W. Ry. N. bound track. 46.85' S. by W. of S.W. corner of 2 story red brick store building on N.E. corner Livingston Ave. and N. & W. Ry. 7.84' W. by N. of hydro pole No. 66D71, 1st E. of N. & W. Ry. on S. side of Livingston Ave.
- 22/5 B. M. 19.
- 22/6 E. side Kilgore Rd. opposite hydro pole No. 66D83 5th S. of Livingston Ave. on E. side Kilgore Rd. Ford axle (with wheel) in E. edge of pavement. 18.64' W. of hydro pole No. 66D83. 30.24' N.W. of center 2" square stake driven for reference. 23' S. of hydro pole No. 66D83. 31.66' S.W. of center of 2" square stake driven for reference. 25th N. of hydro pole No. 66D83. Note: could not find old point S.W. of hydro pole. Set new Ford axle with wheel at top.
- 22 7 W. side Kilgore Rd. at 1st bend S. of Livingston Ave. Ford axle with wheel on top on W. edge of pavement. 9.07' E. of 18" Elm tree on W. side of road at bend. 48.61' N.W. of tel. and hydro pole No. 66D91 last on E. side of road going south. 66.45' N. by E. of E. standard of Moon Motors sign post on W. side of road at bend. Caution: do not use old point set on old pavement. New point has wheel on top and is about 1' above and 4' S. of old point.
- 22 8 E. side Kilgore Rd. at bend just N. of concrete culvert. Ford axle on E. edge of pavement opposite tel. and hydro pole No. 66D100. 6.11' W. of tel. and hydro guy pole on E. side of road at bend No. 66D100. 51.41' E. of tel. and hydro pole No. 66D99 2nd N. of culvert on W. side of road. 19.14' N.W. of 24" Elm tree on E. side of road.
- 22 9 W. side Kilgore Rd. on bend just S. of concrete culvert. Ford axle 13.4' E. by S. of railroad spike in hydro pole No. 66D103 on S.W. corner with drive to farm house. 38.55' S.W. of mail box post on W. side of road at bend.
- 22/10 B. M. 21.
- 22/11 B. M. 22.
- 22/12 Inside of W. entrance to Franklin County Infirmary. Ford axle on E. side of entrance drive. 5.1' N. of iron gate post. E. side of entrance. 15.82' N.E. of iron gate post on W. side of entrance.
- 22/13 E. side of Moler Rd. 300' S. of N. & W. Ry. crossing. Ford axle in E. edge of pavement. 17.04' W. of gauge of W. rail of W. track N. & W. Ry. 91.5' N. by E. of tel. pole 4th S. of N. & W. crossing on E. side Moler Rd. 40.24' S.W. of tel. pole 3rd S. of bend in road to N. & W. crossing on W. side Moler Rd. 21.9' E. of W. fence Moler Rd.
- 22/14 S.E. corner of bend to N. in Moler Rd. Ford axle with wheel driven slightly below surface. 24.77' S.E. of corner fence post on N.W. corner. 9.73' N.W. of telephone guy

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- pole. S.E. cor. 19.95' W. of gauge of W. rail of W. track of N. & W. Ry. 12.9' N. of S. fence Moler Rd.
- 22 15 N. side Moler Rd. on W. range line of 2 story red brick dwelling on S. side of road. 1st house W. of Ry. Ford axle on N. edge of pavement. 63.5' N. of N.E. cor. of red brick house. 32.82' E. by S. of telephone pole on N. side of road. 1st W. of R.B. house. 6.78' S. of N. fence Moler Rd. 62.85' N.W. of telephone pole on S. side of road in front of yard of red brick house.
- 22 16 S. side Moler Rd. about 180' W. of W. range line of 2 story frame house on N. side of road. 90' E. of E. range line of small cottage on S. side of road. Ford axle in S. edge of pavement. 9.0' N. of S. fence Moler Rd. 27.35' S.W. of tel. pole on N. side of Road. 21.4' S. of N. fence Molar Rd.
- 22 17 B. M. 45.
- 22 18 B. M. 44.
- 22 19 N. side Moler Rd. and W. range line of 2-story frame house. 4th frame house E. of Lockbourne Rd. on S. side Moler. Ford axle in N. edge of pavement. 57.8' W. by S. of tel. pole on N. side of road opposite E. side entrance drive to house described above. 30.36' N.W. of 18" tree 2nd tree W. of entrance drive on S. side of road. 76.72' N.E. of tel. guy pole on S. side of road.
- 22 20 B. M. 43.
- 22 21 B. M. 42.
- 22 22 W. side Lockbourne opposite S. side Smith Rd. Ford axle in W. edge of pavement. 6.45' E. of tel. guy pole on W. side Lockbourne Ave. 30.05' S. by E. of hydro pole No. 74A74 on W. side Lockbourne Ave. opposite N. side Smith Rd. 30.05' W. of tel. pole on S.E. corner. 79.2' N. of hydro guy pole No. 74A75 W. side Lockbourne Ave. 80.0' S. of S. side Smith Rd.
- 22 23 W. side Lockbourne Ave., about 2' N. of S. lot line Reeb Ave. Ford axle in W. edge of pavement. 70.78' N.W. of tel. pole 1st S. of Reeb Ave. on E. side Lockbourne Ave. 18.2' E. by N. of wood stake on corner of S.W. corner lot. 92.95' S.W. of 18" Elm tree. 1st N. of Reeb Ave. on E. side Lockbourne Ave. 51.5' S. by E. of wood stake on corner of N.W. corner lot.
- 22 24 B. M. 30.
- 22 25 B. M. 31.
- 22 26 S. side Marion Rd. on E. range of red brick building. Power station on N. side of road. Ford axle in S. edge of pavement. 36.63' S.W. of hydro pole No. 81B60 1st E. of E. end of substation. 38.4' S. of S.E. corner concrete base of steel column on S.E. corner of transmission tower. 26.25' N.W. of hydro guy pole No. 81B61 S. side of road opposite No. 81B60.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 22/27 S. side Marion Rd. on E. range line of Brown Steel Co. building. Ford axle in S. edge of pavement. 101.9' E. by N. of tel. pole S. side Marion Rd. on E. side of entrance to Brown Co. 23.76' S.W. of hydro pole No. 81B44 on N. side of road about 6' E. of E. range line of Brown Co. building. 20.98' N.W. of hydro pole No. 81B120 S. side of Marion Rd. about 15' E. of E. range line of Brown Co. building.
- 22/28 S. side Marion Rd. on E. range line of two story red brick factory building Bonny Floyd Co. Ford axle in S. edge of pavement. 16.75' N. of N.E. corner Bonny Floyd Co. building. 43.98' S.W. of tel. and hydro pole carrying street light N. side Marion Rd. opposite frame office building of Bonny Floyd Co. 52.9' E. of tel. and hydro pole No. 81B24 S. side Marion Rd. just E. of entrance to Bonny Floyd Co. casting shop.
- 22/29 B. M. 32.
- 22/30 B. M. 33.
- 22/31 N.E. corner Parsons Ave. and Marion Rd. lead hub in sidewalk. 4.3' E. by S. of S.W. corner of catch basin in curb on N.E. corner. 3.6' S.W. of S.W. corner of concrete foundation of red brick building on N.E. corner. 3.65' N.W. of 18" wood tel. pole on N.E. corner.
- 22/32 E. side Parsons Ave. opposite S. sidewalk Reeb Ave. Ford axle in center of E. sidewalk Parsons Ave. 5.0' E. of E. curb Parsons Ave. 2.93' W. of W. face of stone step at entrance to pool room at No. 1884 Parsons Ave. 17.94' S.E. of 20" wood tel. pole No. 73D227 on E. side Parsons Ave. opposite Reeb Ave. 15.33' N.W. of S.W. corner of foundation of 2 story red brick building No. 1884 Parsons Ave.
- 22/33 B. M. 35.
- 22/34 B. M. 36.
- 22/35 S.W. corner S. Sixth St. and Reeb Ave. between sidewalk and curb Reeb Ave. 2.44' S. of S. curb Reeb Ave. 3.01' W. of W. edge of W. sidewalk S. Sixth St.. 1.63' N. of N. edge of S. sidewalk Reeb Ave. 13.2' N.E. of N.E. corner tile block foundation of 2 story frame dwelling on S.W. corner No. 1835 S. Sixth St.
- 22/36 B. M. 293.

DESCRIPTIONS OF TRAVERSE STATIONS

No. 23

- 23, 1 B. M. 294.
- 23/2 E. edge of E. sidewalk of S. High St. Ford axle about 2' N. of N. range line of 2 story frame store building No. 1876 S. High St. 12.0' E. of E. curb High St. 18.92' S.E. of steel trolley pole 3rd N. of N. end of viaduct on E. side of High St. 24.28' N.E. of 10" Maple tree 1st Maple N. of viaduct on E. side High St.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 23 3 E. side High St. lead hub in sidewalk over pier at center of main span of viaduct. 9.21' E. of E. curb High St. 2.89' W. of W. face of conc. guardwall on E. side of viaduct. 57.95' S.E. of steel trolley pole 4th S. of N. end of viaduct on E. side. 43.08' N.E. of steel trolley pole 5th S. of N. end of viaduct on E. side.
- 23 4 E. side S. High St. Ford axle in corner of W. edge of E. sidewalk and S. curb turn-in just S. of approach to viaduct. 5.28' W. of N.W. corner of 10" square concrete post on N.W. corner of iron picket fence. 5.1' E. of E. curb line High St. 9.66' N.E. of tel. pole No. 81A183 1st wood pole S. of viaduct on E. side of High St. 0.5' S. of face of S. curb at turn-in.
- 23 5 B. M. 94.
- 23/6 B. M. 95.
- 23/7 N. side Frank Rd. about 5' E. of E. end of bridge over old canal. Ford axle in N. edge of pavement. 8.11' S.E. of S.E. corner steel bridge girder on N. side of road. 21.72' N. by E. of N.E. corner steel bridge girder on S. side of road. 5.4' S. of wood guard rail post 2nd E. of E. end of bridge.
- 23 8 S. side Frank Rd. opposite tel. pole No. 8900, 11th W. of bridge over canal. 18.9' S. of N. wood guard rail 1.45' N. of S. wood guard rail. 2.05' N.W. of wood guard rail post opposite tel. pole No. 8900. 6.88' N.E. of wood guard rail post next W. of one dese. above. Note: Look for Kiel marks on guard rail.
- 23 9 S. side Frank Rd. 50' W. of W. end of bridge over Scioto River. Ford axle in S. edge of pavement. 3.92' E. of gauge of E. rail of Hocking Valley switch to sewage disposal plant. 52.74' W. by N. of iron end post W. end of S. handrail of bridge. 26.37' S.W. of 5" wood post at W. end of wood rail on N. side of road.
- 23/10 B. M. 97.
- 23/11 B. M. 98.
- 23/12 S.W. corner Frank Rd. and Jackson Pike set about 1' below surface on bank E. side of entrance drive to 2 story red brick house. 6.1' N. of tel. guy pole on S.W. corner. 32.6' N.E. of base stone of stone post on W. side of entrance drive to 2 story red brick house. 47.3' W. of tel. pole on E. side Jackson Pike opposite Frank Rd. 51.85' S. of tel. pole on N.W. corner. Note: This B. M. not paired—set to hold corner only.
- 23/13 N. side Frank Rd. opposite a point midway between 5th and 6th tel. pole W. of Jackson Pike on S. side Frank Rd. Ford axle in N. edge of pavement 19.72' S.W. of 4" thorn tree in N. fence line. 21.83' S.E. of 4" forked thorn tree in N. fence line. 77.62' N.W. of tel. pole No. 8924½, 5th W. of Jackson Pike on S. side Frank Rd. 60.35' N.E. of tel. pole No. 8925, 6th W. of Jackson Pike on S. side Frank Rd.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 23/14 N. side Frank Rd. Ford axle in N. edge of pavement opposite tel. pole No. 8928½, 3rd E. of culvert. 37.8' N. of tel. pole No. 8928½, 17.2' S. of N. fence line Frank Rd. 137.3' S.W. of 18" Elm tree in N. fence line. 140.5 E. by N. of tel. pole No. 8929, 2nd E. of culvert on S. side of road.
- 23/15 S. side Frank Rd. 35' W. of 2 story frame house on S. side of road. 12.1' N. of S. fence Frank Rd. 44.3' S. of N. fence Frank Rd. 20.48' N.W. of tel. pole No. 8934 on W. side of entrance drive to 2 story brown frame house in S. fence line. 105.6' E. by N. of tel. pole No. 8934½, 2nd W. of 2 story brown frame house on S. side of road.
- 23/16 N. side Frank Rd. 100' W. of entrance drive to 2 story frame dwelling No. 1009 Frank Rd. on S. side. 1.5' S. of N. fence line Frank Rd. 10.0' E. of telephone pole 2nd W. of house No. 1009 on N. side of road. 70.75' N.W. of tel. pole No. 8938, 1st W. of house No. 1009 on S. side of road. 55.3' N. of S. fence line Frank Rd.

DESCRIPTIONS OF TRAVERSE STATIONS

LINE No. 24

- 24/1 B. M. 125.
- 24/2 S. side Broad St. about 120' W. of Belvidere Ave. Ford axle at S. edge of S. Sidewalk. 8.48' S. of S. curb Broad St. 12.15' E. of E. edge of concrete entrance walk to 2 story frame dwelling No. 2077 W. Broad St. 17.65' W. of W. edge of concrete entrance walk to same 2 story house No. 2071 W. Broad St.
- 24/3 S.E. corner W. Broad St. and Clarendon Ave. Lead hub in S. sidewalk. 6.75' S. of S. curb Broad St. 5.5' E. of W. range line E. sidewalk Clarendon Ave. 1.77' N. of S. edge S. sidewalk Broad St. 53.61' W. of N.W. corner bottom step of concrete entrance walk to St. Aloysius School House on S.E. corner.
- 24/4 S.E. corner Broad St. and Wheatland Ave. lead hub in S. sidewalk 4.0' S. of S. curb Broad St. 3.7' E. of W. range line E. sidewalk Wheatland Ave. 6.0' N. of S. range line S. sidewalk Broad St. 16.7' W. by N. of N.W. corner 24" square red brick light standard post on W. side of entrance to Columbus Oil Co. filling station.
- 24/5 S.E. corner Broad St. and S. Park Ave. lead hub in S. sidewalk Broad St. 4.62' W. by S. of S.W. corner of base of steel trolley pole on S.E. corner. 7.74' N.W. of N.W. corner of foundation of Citizen's Bank Building on S.E. corner No. 2395 W. Broad St. 10.85' N.E. of street name standard on S.E. corner Broad St. and S. Park Ave. 5.7' E. by S. of S.W. corner of catch basin in curb on S.E. corner.
- 24/6 B. M. 121.
- 24/7 B. M. 120.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 24/8 N.E. corner Broad St. and Hague Ave. Ford axle at point of intersection of N. edge of N. sidewalk Broad St. and W. edge of E. sidewalk of Hague Ave. 2.21' E. of E. curb of Hague Ave. 9.2' N. of N. curb Broad St. 6.29' S. of fire hydrant on N.E. corner. 13.4' N.W. of light pole No. 62-A-236 on N.E. corner.
- 24 9 N.E. corner Broad St. and Roys Ave. Ford axle at intersection of S. edge of N. sidewalk Broad St. and E. edge of E. sidewalk Roys Ave. 8.9' N. of N. curb Broad St. 7.1' N.E. of tel. pole carrying street light on N.E. corner. 5.0' S. of N. edge N. sidewalk Broad St.
- 24 10 N.E. corner Broad St. and Westmoor Ave. Ford axle in old asphalt between curb and future sidewalk Broad St. 8.55' N. of N. curb Broad St. 14.35' E. of E. curb line Westmoor Ave. N. 23.35' W. of 10" wood trolley pole. 1st E. of Westmoor Ave. on N. side of Broad St.
- 24 11 S.E. corner Broad St. and S. Brinker Ave. Ford axle in grass plot between curb and future sidewalk Broad St. 12.65' N. of iron prop. tube on S.E. corner 2.4' S. of S. curb Broad St. 8.94' E. by N. of tel. pole on S.E. corner. 23.78' W. by N. of 14" Maple tree 2nd E. of Brinker Ave. on S. side Broad St.
- 24 12 B. M. 118.
- 24/13 B. M. 117.
- 24 14 W. side Demorest Ave. S. of Camp Chase Dr. Ford axle at W. edge of W. curb. 8.75' S. by E. of fire hydrant 1st S. of Camp Chase Dr. on W. side road. 17.42' N. by E. of water box about 1.5' W. of W. curb Demorest Ave. 0.49' W. of W. curb Demorest Ave.
- 24 15 W. side Demorest Ave. Ford axle at W. edge of W. curb in front of lot No. 231. 0.53' W. of W. curb Demorest Ave. 3.44' N. by E. of water box connection for lot No. 231 Demorest Ave. on W. side (measured to center of bolt head in water box cap).
- 24 16 S.W. corner Demorest Ave. and Girard St. inside of future sidewalk lines. 1.0' E. of property corner tube on S.W. corner. 1.0' N. of property corner tube S.W. corner. 17.0' W. of W. curb Demorest Ave. 15.8' S.W. of S.E. corner of catch basin in curb face on S.W. corner. 11.8' S. of S. curb Girard St.
- 24 17 N.E. corner Sullivant Ave. and Demorest Ave. inside of sidewalk lines. 16.7' E. of E. curb line Demorest Ave. 31.2' N. of N. edge of concrete pavement Sullivant Ave.
- 24 18 W. side Demorest Rd. Ford axle in W. edge of pavement opposite tel. pole No. 9053, 7th S. of Sullivant Ave. on W. side of road. 10.45' E. of tel. pole No. 9053 28.2' W. by N. of 36" Elm tree on E. side of road. 51.9' S.W. of mail box post (Mr. Al. Leeper) on E. side of road. 126.2' S. of tel. pole No. 9054, 6th S. of Sullivant Ave. on W. side of road.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 24/19 E. side Demorest Rd. Ford axle in E. edge of pavement opposite tel. pole No. 9045, 3rd S. of entrance drive to 2 story frame dwelling on W. side of road. 25.23' E. of tel. pole No. 9045. 11.55' W. of E. fence line Demorest Rd. 119.3' N. by W. of tel. guy pole to pole No. 9044.
- 24/20 B. M. 113.
- 24/21 B. M. 112.
- 24/22 N. side Briggs Rd. Ford axle in N. edge of pavement on W. range line of 1½ story frame dwelling 1st W. of Demorest Ave. on S. side of road. 59.3' N. of N.W. corner of 10" square red brick corner post on N.W. corner of porch of 1½ story dwelling. 64.7' N.W. of N.E. corner of similar corner post on N.E. corner of porch. 28.6' N.E. of corner fence post (6" wood) on N.E. corner of small peach orchard.
- 24/23 S. side Briggs Rd. Iron pipe about 2' S. of S. edge of pavement and 250' E. of 2 story white frame dwelling on S. side of road on line of fence running north. 10.0' N. of S. fence line Briggs Rd. 47.15' E. by N. of 5" tree in S. fence line. 78.1' W. by N. of 24" Elm tree about 2' S. of S. fence line, 1st E. of white frame house. 27.4' S. of 12" wood fence post on S. end of fence running N.
- 24/24 B. M. 111.
- 24/25 B. M. 110.
- 24/26 N. side Briggs Rd. 700' E. of last B.M. 110. Ford axle with wheel on N. edge of pavement about on line between 24" Elm tree on N. side of road 2nd E. of driveway to field and 14" Elm just S. of S. fence line and 10' W. of tree described above. 12.14' S. by W. of 24" tree on N. side of road. 25.48' N. by E. of 14" Elm on S. side of road. 58.2' E. by S. of 36" forked Elm tree on E. side of driveway to field on N. side of road.
- 24/27 S. side Briggs Rd. 200' W. of entrance drive to old 2 story frame farmhouse on S. side of road. Ford axle with cog wheel on top at E. edge of pavement at rise in road over old stone culvert. 12.85' N. of fence post on S. side of road. 44.14' S.W. of 24" Elm tree on N. fence line Briggs Rd. 39.59' N.E. of old 18" apple tree about 5' S. of S. fence line in field.
- 24/28 N. side Briggs Rd. 200' W. of shack on N. side of road. Iron pipe about 3' S. of N. fence line. 40.2' N. of S. fence line Briggs Rd. 5.2' N.W. of fence post in N. fence, 5th W. of entrance to field. 18.1' E. by N. of fence post in N. fence, 6th W. of entrance to field. Note: 10" tree in field opposite entrance mentioned.
- 24/29 B. M. 109.
- 24/30 B. M. 108.
- 24/31 S. side Briggs Rd. Ford axle on S. edge of pavement. 10' W. of 1st fence line of 1st 2 story frame dwelling W. of B. & O. Ry. running S. from Rd. 17.33' N.W. of fence post N. end of fence to S. from road as desc. above. 22.5' S. of N.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- fence line Briggs Rd. 14.74' N.E. of fence post in wood fence on S. side of road, 3rd post W. of fence to S. Note: Old point set on fence line could not be found by traverse party. New point set.
- 24/32 N. side Briggs Rd. about 2' S. of N. fence line iron pin about 55' E. of Ry. 42.9' N.E. of 18" Elm tree, 1st E. of B.&O. Ry. on S. fence line Briggs Rd. 62.3' N.W. of similar Elm 2nd E. B.&O. Ry. on S. fence line. 54.4' E. of gauge of E. rail of B.&O. track at a point on line of N. fence Briggs Rd.
- 24/33 B. M. 107.
- 24/34 B. M. 106.
- 24/35 S.W. corner of Harrisburg Pike and future street allowance between frame dwellings No. 1689 and 1701 Harrisburg Pike (this point may be disturbed when sidewalk is put in on Harrisburg Pike). 34.2' W. of gauge of W. rail of Grove City line of C.N.&Z. Elec. Ry. on E. side of road. 34.92' N.E. of N.E. corner of concrete block foundation of 2 story frame dwelling No. 1701 Harrisburg Pike. 47.52' S.E. of S.E. corner of stone foundation of dwelling No. 1689 Harrisburg Pike. 46.33' S. of tel. pole in front of No. 1689 on W. side of Harrisburg Pike.
- 24/36 B. M. 105.
- 24/37 B. M. 104.
- 24/38 N. side of Frank Rd. at culvert about 350' W. of bridge at bend in road. Ford axle in N. edge of pavement. 5.02' S.E. of S.W. corner concrete culvert headwall in N. side of road. 4.92' S.W. of S.E. corner concrete culvert headwall on N. side of road. 29.37' N.E. of N.E. corner concrete culvert headwall on S. side of road. (This point to be used for azimuth sight between B.M. 104 and 103.)
- 24/39 N. side Frank Rd. Ford axle in N. edge of pavement 25' E. of E. end of concrete bridge at bend in road. 20.94' N.E. of N.E. corner concrete bridge headwall on S. side of road. 24.43' E. of S.E. cor. concrete bridge headwall on N. side of road. 2.56' S.E. of wood post in N. guard rail 4th E. of E. end of bridge. 6.72' S.W. of wood post in N. guard rail 5th E. of E. end of bridge.
- 24/40 S. side Frank Rd. just past 1st bend E. of Concrete bridge. 13.53' N.E. of tel. pole No. 8961, 1st on S. side of road after line crosses field through hollow. 69.5' W. by N. of tel. pole No. 8960, 1st E. of No. 8961. 49.25' E. of wood end post. E. end of guard rail on S. side of road. 38.4' S.W. of 24" tree in fence line on N. side of road.
- 24/41 S. side Frank Rd. Ford axle in S. edge of pavement between 3rd and 4th tel. pole W. of Adam Gantz Rd. on S. side Frank Rd. 28.93' N.W. of tel. pole No. 8958½, 3rd W. of Adam Grantz Rd. 52.65' N. by E. of tel. pole No. 8959 4th W. of Adam Gantz Rd. 29.1' S. of N. fence line Frank Rd. 14.9' N. of S. fence line Frank Rd.
- 24/42 B. M. 103.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 24/43 B. M. 102.
- 24/44 S. side Frank Rd. Ford axle in S. edge of pavement between 9th and 10th tel. pole W. of Brown Rd. on S. side Frank Rd. 65.9' W. by N. of tel. pole No. 8947½ 9th W. of Brown Rd. 72.27' E. by N. of tel. pole No. 8948, 10th W. of Brown Rd. 56.48' S.W. of tel. pole on N. side of road.
- 24/45 B. M. 101.
- 24/46 W. side Brown Rd. on N. range line of front part of 2 story frame house on W. side of road. No. 1801 Brown Rd. Ford axle in W. edge of pavement. 20.1' N.E. of N. gate post of entrance to No. 1801 Brown Rd. 47.07' E. of N.E. corner of house No. 1801 Brown Rd. 76.68' N.W. of 10" hydro pole on E. side of road opposite orchard S. of house No. 1801. 26.32' S.W. of N. gate post at entrance to field on E. side of road opposite house No. 1801.
- 24/47 E. side Brown Rd. on S. range line of white cottage trimmed in brown. W. side of road No. 1675 Brown Rd. Ford axle with wheel on top in E. edge of pavement 73.5' S.E. of N. gate post at entrance drive to dwelling No. 1675. 52.87' N. by W. of 16" Elm tree on E. side of road 1st S. of entrance to No. 1675. 26.66' S. by W. of tel. pole on E. side of road. 1st S. of entrance drive to No. 1675. 29.5' E. of W. fence line Brown Rd.
- 24/48 B. M. 136.
- 24/49 B. M. 137.
- 24/50 E. side Brown Rd. on N. sidewalk line Richmond Rd. Ford axle in E. edge of pavement. 14.21' S. by W. of tel. pole on E. side Brown Rd. about 8' N. of N. lot line Richmond Ave. 42.65' N. by W. of 16" forked tree Elm. E. side Brown Rd. opposite S. side Richmond Rd. 39.5' E. of S.E. corner square red brick corner post on N.W. corner Brown Rd. and Richmond Rd. 53.9' N.E. of N.E. corner square red brick post on S.W. corner.
- 24/51 N.W. corner Brown Rd. and Hopkin Ave. Ford axle 6' W. of pavement Brown Rd. on N. range line of 31250 Brown Rd. 23.86' E. of S.E. corner square concrete corner post on N.W. corner. 71.27' N.E. of N.E. corner bottom step to concrete porch on front of store on S.W. corner. 42.54' S.W. of hydro pole 1st N. of Hopkin Ave. on E. side Brown Rd. 82.14' N.W. of tel. pole 1st S. of Hopkin Ave. on E. side Brown Rd.
- 24/52 B. M. 138.
- 24/53 B. M. 53.
- 24/54 E. side Brown Rd. on S. sidewalk line Ransberg Ave. Ford axle 3' W. of W. fence of Greenlawn Cemetery. 2.3' W. of E. fence Brown Rd. 37.6' E. of hydro pole No. 71A136 on S.W. corner Brown Rd. and Ransberg Ave. 3.1' S. of N. range line of 2 story frame house on S.W. corner No.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

PLEASE SEE ERRATA SHEET, BACK COVER

- 999 Brown Rd. 111.5' N.E. of hydro pole No. 71A146 2nd S. of Ransberg Ave. on W. side Brown Rd.
- 24/55 E. side Brown Rd. Ford axle on S. range line of 2 story frame dwelling No. 839 Brown Rd. 51.34' S.E. of tel. and hydro pole No. 71A123 about on range line of house No. 839. 2.62' W. of E. fence Brown Rd. 61.5' E. of S.E. corner of house No. 839 Brown Rd. 84.18' N.E. of hydro pole No. 71A124 1st S. of house No. 839 on W. side of road.
- 24/56 W. side Brown Rd. iron pipe 6' S. of S. range line of old barn on W. side of road. 4.41' N.E. of N. gate post of entrance drive to red brick farm house on S. side of road. 36.9' N. by W. of tel. and hydro pole No. 71A19 1st S. of entrance to farm house on W. side of road. 45.72' W. of E. fence Brown Rd. 124.11' S. of tel. and hydro pole No. 71A120 1st N. of entrance on W. side of road.
- 24 57 B. M. 141.
- 24 58 B. M. 142.
- 24 59 S.W. corner Central Ave. and Thomas Ave. Ford axle on W. edge of W. sidewalk Central Ave. 6.55' W. of W. curb Central Ave. 42.02' S. of hydro pole bearing street light on N.W. corner No. 63C5. 34.5' N. by E. of N.E. corner top step of concrete entrance walk to Ollam and Jahn Coal and Feed office on S.W. corner No. 497 Central Ave.
- 24/60 N.E. corner Central Ave. and Union Ave. Ford axle inside of sidewalk lines. 0.91' E. of E. edge of E. sidewalk Central Ave. 6.27' S.W. of S.W. corner bottom step of concrete entrance walk to 2 story frame dwelling on N.E. corner. No. 412 Central Ave. 8.95' N.W. of hydro pole No. 63D228 carrying street light on N.E. corner. 25.6' S. and across sidewalk from hydro pole No. 63D221 1st N. of Union Ave. on E. side Central Ave.
- 24/61 E. side Central Ave. opposite S. curb line of Rich. St. W. from Central. Ford axle at E. edge of E. sidewalk. 19.87' N. of N. edge of concrete entrance walk to 2 story frame dwelling No. 268 Central Ave. 5.38' E. of E. curb Central Ave. 78.61' S. and across sidewalk from 5" round steel trolley pole on E. side of street about 3' S. of S. range line of house No. 248 Central Ave.
- 24/62 N.E. corner Central Ave. and Town St. inside of sidewalk lines Ford axle at E. edge of E. sidewalk Central Ave. 8.8' N. of N. curb Town St. 7.45' N.E. of N.W. corner of catch basin in curb on N.E. corner. 24.1' S. of S. edge of concrete entrance walk to No. 162 S. Central Ave. 4.92' E. of hydro pole carrying street light on N.E. corner.

DESCRIPTIONS OF TRAVERSE STATIONS

Line No. 25

- 25/1 B. M. 158.
 25/2 B. M. 157.
 25/3 On S.E. corner W. Fifth Ave. and Dublin Pike. 2.7' S. of S. curb Fifth Ave. 9.4' N.E. of power pole No. 38073 on S.E. corner. 8.6' N. of N. face of stone fence along S. side Fifth Ave.
- 25/4 W. side Dublin Pike opposite a point midway between tel. pole No. 46B414 and No. 46B413, 6th and 7th S. of Fifth Ave. on E. side of Dublin Pike. Ford axle with wheel in W. edge of pavement. 66.07' N.W. of tel. pole No. 46B413, 41.26' W. of W. face of stone fence on E. side Dublin Pike. 73.8' S.W. of tel. pole No. 46B414 6th S. of Fifth Ave. on E. side road.
- 25/5 E. side Dublin Pike Ford axle on E. edge of pavement opposite power pole No. 46B405 2nd N. of Cardington Ave. 3.0' W. of power pole No. 46B405. 36.07' E. of power pole No. 46B406. Guy pole to No. 46B405. 102.15' N. of power pole No. 46B403. 49.55' S. by W. of 12" tree about 1' E. of E. stone fence Dublin Pike. 1st tree N. of power pole No. 46B405.
- 25/6 E. side Dublin Pike opposite entrance drive to stone quarry. Ford axle in E. edge of pavement. 83.0' S. of tel. pole No. 46B398. 5th S. of Cardington Ave. on E. side road. 52.13' N. of tel. pole 6th S. of Cardington Ave. on E. side of road. 2.5' S.W. of 6" wood guard rail post 16th S. of N. end of guard rail.
- 25/7 B. M. 152.
 25/8 B. M. 151.
 25/9 W. side Dublin Pike opposite tel. pole No. 46B370. Ford axle in W. edge of pavement. 50.13' W. of tel. pole No. 46B370 4th N. of E.W. stone fence south boundary of Alladin Country Club property. 23.9' E. of 6" thorn tree on W. side of road. 54.92' S.W. of double Elm tree about 6' E. of E. edge of pavement and 35' N.W. of tel. pole No. 46B370.
- 25/10 S. side Dublin Pike about 100' E. of 2 story frame dwelling No. 2089 Dublin Pike. Ford axle on S. edge of pavement. 47.2' S. of tel. pole No. 46B363, 1st on N. side E. of dwelling No. 2089 Dublin Rd. 14.82' N. of fence post at N. end of wire fence to S. side Dublin Rd. 45.7' W. by N. of 24" poplar tree, 1st E. of wire fence on S. side of road.
- 25/11 S. side Dublin Pike on E. range line of 2 story stone dwelling No. 1875 Dublin Rd. Ford axle in S. edge of pavement. 49.34' S. of tel. pole No. 46B351 on N. side of road opposite house No. 1875 Dublin Pike. 21.91' N.E. of N.E. corner bottom step of concrete entrance walk to house No. 1875 Dublin Pike. 49.7' N. of N.E. corner of No. 1875.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

- 25 12 B. M. 150.
 25/13 B. M. 149.
 25 14 E. side Grandview Ave. Ford axle in E. edge of pavement opposite a point about 30' N. of hydro pole No. 55A38, 9th S. of Dublin Rd. on W. side of Grandview Ave. 25.56' N.W. of tel. pole No. 2164 on E. side of road opposite No. 55A38. 102.4' S. by W. of tel. pole No. 2163, 47.37' N.W. of hydro pole No. 55A38.
- 25 15 B. M. 148.
 25 16 B. M. 146.
 25 17 S. side McKinley Ave. 14.22' N. of 7th hydro pole W. of Central Ave. on S. side road. Ford axle in S. edge of pavement. 35.58' S. of tel. pole No. 2188 on N. side of road. 43.8' N.W. of 10" tree, 1st E. of hydro pole No. 2188 on S. side of road. 161.2' N.E. of hydro pole 8th W. of Central Ave. on S. side of road.
- 25 18 B. M. 145.
 25 19 B. M. 144.
 25 20 W. side Central Ave. Ford axle on N. edge of concrete entrance walk to 2 story frame dwelling No. 103 N. Central Ave. (driven about 2" below sidewalk level) 1.94' E. of N.E. corner of step in concrete entrance walk. 16.32' W. of W. edge of W. sidewalk Central Ave. 13.77' N.W. of N.E. corner of catch basin in W. curb Central Ave. 80' S.E. of tree stump on lawn or dwelling house No. 103 Central Ave.
- 25 21 B. M. 127.
 25 22 B. M. 126.
 25 23 S. side Broad St. opposite 4th steel trolley pole W. of entrance drive to Ohio Institute for Feeble Minded Youth. Ford axle at S. edge of S. sidewalk. 4.87' S. of S. face of base of steel trolley pole desc. above. 9.54' N. of iron fence on S. side Broad St., 24.85' E. by N. of twin 12" tree, 1st W. of above desc. trolley pole between S. sidewalk and fence. 12.72' W. by N. of 5" Maple tree 1st E. of trolley pole between sidewalk and fence.
- 25 24 S. side Broad St. Ford axle at S. edge of sidewalk opposite 12" Elm tree between second and third steel trolley pole W. of curb turn-in at entrance drive to Municipal Tourist Camp. 7.5' S. of S. curb Broad St. 2.85' N. of 12" Elm tree described above. 37.02' E. and across sidewalk from S.E. corner of base of steel trolley pole 3rd W. of entrance drive desc. above. 82.82' W. and across sidewalk from hydro pole 2nd W. of entrance drive between sidewalk and curb.
- 25 25 B. M. 135.

For descriptions of traverse points, located on bench marks, see bench mark descriptions.

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
1. S.E. cor. High and Mound Sts., Aluminum tablet of USGS, stamped 778 Columbus 1899, at N.W. cor. of Court House, set in vertical face of wall below cor. stone.....	777.600
2. N.E. cor. High and State Sts. B. P. in con. mon. in N. sidewalk of State St.....	767.825
3. N.W. cor. State and Third Sts., B. P. in con. mon. in N. sidewalk of State St.....	759.564
4. S.W. cor. Broad and Third Sts., B. P. in con. mon. in N.E. cor. of State House Grounds.....	760.930
5. N.E. cor. Broad and Fourth Sts., B. P. in bottom step, entrance to Broad St. M. E. Church.....	758.777
6. S.E. cor. Broad and Sixth Sts., B. P. in center of top stone step, western Broad St., entrance to present City Hall.....	766.949
7.	
8. N.E. cor. Broad and Garfield Ave., B. P. in N.W. cor. bottom step, entrance to Broad St. Presbyterian Church....	793.824
9. S.W. cor. Broad St. and Twenty-first St., B. P. in bottom step of Broad St. Church of Christ.....	799.945
10. S.E. cor. Broad St. and Woodland Ave., B. P. in con. mon. in sidewalk space (Franklin Park), 18' S. of S. curb of Broad St., 29' E. of E. curb of Woodland Ave.....	775.469
11. E. Broad St. and Alum Creek, B. P. in top N. end of W. abutment, Broad St. bridge over Alum Creek.....	765.469
12. Near Nelson Road and Franklin Park South, B. P. in W. tower, suspension bridge over Alum Creek.....	756.353
13. E. Main St. and Alum Creek, B. P. in top of S. end of W. abutment, Main St. bridge over Alum Creek.....	760.011
14. S.E. cor. Bulen Ave. and McAllister Ave., B. P. in con. mon. 6.0' E. of E. curb of Bulen (paved 26'), 8.7' N. of range of N. side of house No. 522, Bulen Ave.....	755.775
15. E. side Bulen Ave. 42.2' S. of Fulton St. curb. 5.25' E. of E. curb Bulen Ave. 40.0' S. of 2½" steel street sign standard on S.E. cor. Bulen Ave. and Fulton St. 37.86' N. by W. of N.W. cor. of stone slab on top of cor. post N. side of entrance drive to red brick dwelling No. 632 Bulen Ave. Note: This mon. is S. ground point for Elevator transfer...	761.606
16. S.W. cor. Bulen Ave. and Kent St., B. P. in con. mon., 5.9' W. of W. curb of Bulen (paved 53'). 12.9' S. of S. curb of Kent St., 3.6' E. of N.E. cor. of bottom cement step to entrance to 2-F house on S.W. cor.....	754.385
17. N.E. cor. Livingston Ave. and Bulen Ave., 7.85' E. of E. curb line Bulen Ave., 1.65' S.W. of S.W. cor. of base 24" square concrete post on N.E. corner, 64.9' N. of N.W. cor. of base of 24" square con. cor. post on S.E. cor., 1.0' S. of N. lot line Livingston Ave. (paved 26.0').....	753.783
18. Livingston Ave. and Alum Creek, B. P. in top of N. end of W. abutment of bridge over Alum Creek.....	756.208
19. S.W. cor. Livingston Ave. and Kilgore Rd., 22' S. of steel work on S. side of Livingston Ave. bridge over Alum Creek extended and on a line of Kilgore Rd., 49.7' S.E. of tel. pole No. 66P116 1st W. of Kilgore Rd. on S. side Livingston	

PLEASE SEE ERRATA SHEET, BACK COVER

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
Ave., 26.4' E. of N. steel standard of sign board on S.W. cor., (Paul Offenbergl Nursery), 23.5' N.E. of S. steel standard of sign board described above.....	757.728
20. Kilgore (Infirmary) Road, about 3000' S. of Livingston Ave., B. P. in top of S.E. wing wall of culvert under Kilgore Road.....	751.62
21. E. side of Kilgore Rd., 20' S. of N.W. cor. post of Infirmary Farm, 3.19' W. of E. fence Molar Rd., 30.14' N. of tel. pole 1st S. of cor. on E. side of Kilgore Rd., 5.5' S. of 12" tree on E. side Kilgore Rd. just S. of gate to field on corner, 45.76' E. of 12" Maple tree on W. side of Kilgore Rd., first S. of bend in road.....	750.929
22. N.W. cor. Moler Rd. and Kilgore Rd., 3.4' E. of iron fence along E. side of Infirmary grounds. 43.9' W. by N. of tel. pole and hydro pole No. 74B29. On E. side Kilgore Rd. opposite N. side Moler Rd., 38.83' S. of 12" Maple tree, first N. of Moler Rd. on W. side of Kilgore Rd., 5.3' N. of iron fence running along S. side of infirmary grounds.....	774.688
23. T. & O. C. Ry., about 1300' E. of Kilgore (Infirmary) Rd., B. P. in N. side W. abutment of R.R. bridge over Alum Creek.....	752.301
24. Refugee Pike and Alum Creek, B. P. in N. end of back wall of W. abutment of bridge over Alum Creek.....	742.310
25. N.W. cor. Kilgore (Infirmary) Rd. and Refugee Pike, B. P. in con. mon., 6.6' S. of N. fence line of Refugee Pike, 2.6' E. of W. fence line Kilgore Rd., 7' S.W. of tel. pole on N.W. cor.	753.338
26. Valley Crossing, about 1000' N. of, on E. side of N. & W. Ry., just inside of the N.W. cor. of house yard, property of Ernest Geisler (1925), B. P. in con. mon.....	766.222
27. Refugee Pike and N. & W. Ry., on S. side of Refugee Pike, about 450' W. of N. & W. Ry., on land of John Fetterson (1925), B. P. in con. mon., 1.7' S. of S. fence line of Refugee Pike.....	773.241
28. N.E. cor. Lockbourne & T. & O. C. Ry., B. P. in con. footing, N.W. cor. garage of Ohio Packing Co.....	760.230
29. N.E. cor. Lockbourne and Marion Roads, B. P. in top of E. headwell of culvert, about 50' N. of Marion Road.....	758.102
30. E. side Lockbourne Rd., 4.5' N. of S. line of Marion Rd., 4.9' W. of E. fence line of Lockbourne Rd., 55.9' S. of S. E. cor. of headwall of culvert.....	754.756
31. N.E. cor. Marion Rd. and Linwood Ave. about 2' S.W. of property cor., 36.84' E. by N. of hydro pole No. 81B69 on N.W. cor. 54.45' N. of tel. pole on S. side of Marion Rd., opposite E. side Linwood Ave., 63.1' W. by S. of hydro pole No. 81B70, first E. of Linwood on N. side Marion Rd.....	749.341
32. S. side Marion Rd. inside of sidewalk line on W. range line of 3-story red brick factory building, Hercules Paper Box Co., 53.7' S. of wire fence on N. side of Marion, 74.77' N. of N.W. cor. of Hercules Paper Box Co. building, 47.05' S. of tel. pole on N. side Marion Rd. on range line, W. of	

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
Hereules Paper Box Co. building, 87.43' W. of tel. and hydro pole No. 81B19 on S. side Marion Rd. opposite entrance to Hercules Co. factory, 32.55' S.E. of tel. and hydro pole No. 81B18 S. side Marion Rd., first W. of No. 81B19....	742.693
33. N.W. cor. Marion Rd. and Wager St., between sidewalk and curb Wager St., 1.7' W. of W. curb Wager St., 17.96' N.E. of fire hydrant just W. of Wager St. on N. side Marion Rd., 37.55' S.E. of S.E. corner stone foundation of two-story frame dwelling No. 1925 Wager St., 53.36' N.W. of tel. and hydro pole bearing street light S. side Marion Rd. opposite Wager St. No. 81B11, 9.5' N. of N. curb line of Marion Rd. produced from the west (paved 36').....	741.340
34. S.W. cor. Parsons Ave. and Barthman Ave., B. P. in door-sill of bldg. (Drug store 1925).....	739.157
35. S.E. cor. Reeb Ave. and S. Washington Ave., inside of sidewalk lines, 8.9' S. of S. curb Reeb Ave., 11.95' S.E. of S.W. cor. of catch basin in curb on S.E. cor. 5.85' N.W. of N.W. cor. of con. step to porch of two-story frame dwelling on S.E. cor. No. 345 Reeb Ave., 1.07' W. of W. edge of 3' con. entrance walk to No. 345 Reeb Ave.....	740.513
36. S.E. cor. Reeb Ave. and alley along W. side of Reeb Ave. Public School (continuation of Eighth St.) S. of sidewalk Reeb Ave., 8.55' S. of S. curb Reeb Ave., 4.05' E. of E. curb at turn in to alley, 32.86' W. of N.W. cor. of step in con. entrance walk to frame church on S.E. cor., 1.6' N.W. of N.W. cor. of steel fence post on N. end of iron fence along W. side of church yard.....	738.829
37. N.W. cor. Innis Ave. and Fourth St., B. P. in con. mon., 1.9' N. of N. curb of Innis Ave., 45.8' W. of W. curb of Fourth St. (paved 36.0').....Primary	742.091
38. S.E. cor. High St. and Innis Ave., B. P. in con. mon., 3.7' S. of S. curb of Innis Ave. (paved 26'), and 13.8' E. of E. curb of High St. (paved 60').....	748.793
39. S.W. cor. High St. and Markinson Ave., B. P. in con mon., 2.6' W. of W. curb of High St. (paved 60'), 6.9' S. of S. curb of Markinson Ave. (paved 26').....	741.347
40. S.W. cor. High St. and Greenlawn Ave., B. P. in con. mon., 2.2' S. of S. curb of Greenlawn Ave. (paved 35'), 21.4' W. of W. curb of High St. (paved 60').....	753.495
41. W. side of S. High St., near Hoster St., B. P. in door-sill of 3-B storeroom, No. 527-529 S. High St. (Whistle Co., 1925)	749.346
42. W. side of Lockbourne Ave. about 36.4' N. of N. range line of two-story frame dwelling No. 1823 Lockbourne Ave., 5.45' N. by E. of 24" elm tree on N. side of entrance to No. 1823 Lockbourne Ave., 35.6' S. of hydro pole No. 74A68, first N. of No. 1823 Lockbourne on W. side of road., 42.15' E. of E. range line (front) of No. 1823 Lockbourne Ave., 4.0' E. of hedge fence line produced from south of above house	763.792
43. W. side Lockbourne Ave. about 3' S. of N. line of pave-	

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
ment of Moler Rd., 5.48' S. of hydro pole No. 74A56 on W. side Lockbourne Ave. in line with N. side Moler Rd., 74.34' N.W. of N.W. cor. con. block foundation of red brick porch of house No. 1640 Lockbourne Ave., 57.95' S.W. of 12" maple tree about 40' N. of Moler Rd. on E. side Lockbourne Ave., 6.0' E. of W. fence line Lockbourne Ave.....	769.266
44. S. side Moler opposite W. side of road to north., 28.44 S.E. of tel. pole., first W. of road to N. on N. side of Moler Rd., 2.34' N. of S. fence line Moler Rd., 2.5' E. of E. range line of old barn on S. side of road., 91.0' E. of E. side of white frame house on S. side of Moler Rd., first house W. on road to north	768.123
45. W. side Moler Rd. opposite W. side of road to S. on E. range line of 1½-story red brick house on N. side of road., 33.1' S. of S.E. cor. of red brick house, 13.63' W. of tel. pole opposite road to south, 30.1' N. by E. of cor. fence post on S.W. cor., 37.55' S.E. of S.W. cor. of red brick house.....	770.502
46. S.W. cor. Maryland Ave. and Chatfield, B. P. in con. mon., S. side of Maryland Ave., 2.8' S. of S. curb of Maryland Ave., 46.8' W. of W. curb of Chatfield Park, (paved 24')..	774.297
47. S.E. cor. Maryland Ave. and Chancery Way, B. P. in con. mon., S. side Maryland Ave., 2.0' S. of S. curb Maryland Ave. (paved 24'), 21.7' E. of E. curb of Chancery Way (paved 24')	768.285
48. N.W. cor. Fifth Ave. and Nelson Rd., B. P. in lintel over S. basement window of 2-B bldg., on N.W. cor. No. 833 Nelson Rd. (Kroger Grocery, 1926).....	774.148
49. N.E. cor. Sunbury Pike and Leonard Ave., B. P. in con. mon., 3' W. of W. fence line St. Mary's, 16.5' N.W. of N.W. cor. of 2' gate post, entrance to St. Mary's, 3.9' E. of tel. pole No. 42D104.....	780.645
50. N.E. cor. Broad St. and Governor Place, B. P. in W. end of bottom step, entrance to walk to Governor's Mansion, E. Broad St.	801.644
51. Sunbury Pike, about 300' N. of Leonard Ave., W., B. P. in con. mon., 21.0' N. of range of N. side of house No. 1065 on W. side Sunbury Pike, 14.5' W. of W. hedge fence of St. Mary's, 2' E. of E. edge of pavement.....	786.381
52. Sunbury Pike near Woodward Ave., B. P. in con. mon., W. side of road, 146.6' S. of S. end of W. headwall of culvert, 44.8' W. of hedge fence of St. Mary's.....	788.624
53. E. Fifth Ave. and Woodland Ave., S. side of Fifth Ave. opposite center line of Woodland Ave., B. P. in con. mon., 2.2' S. of S. curb of Fifth Ave., 54' N.E. of N.E. cor. of S.E. wing-wall, 77' S.E. of the S.E. cor. of N.E. wing-wall of overhead crossing	788.392
54.	
55. Woodland Ave. about half way between Fifth Ave. and Woodward Ave., B. P. in con. mon., W. side Woodland Ave., 135.2' S. of the guage of the S. rail of Penn. R. R., 56.5' W. of E. fence of Woodland Ave., 109.8' S. of R.R. cor.	

DESCRIPTION OF PRECISE LEVELS

B. M. No.		Elevation
	post	801.219
56.	N.E. cor. of Woodland Ave. and Woodward Ave., B. P. in con. mon., 3.1' W. of E. fence line of Woodland Ave., 20.0' N. of N. fence line of Woodward Ave.....	805.779
57.	N.W. cor. of Woodland Ave. and Seventeenth Ave., B. P. in con. mon., 0.5' E. of W. fence line of Woodland Ave., 2.3' S. of N. fence line of Seventeenth Ave.....	809.112
58.	W. side of Woodland Ave. about 1300' S. of Mock Rd., B. P. in con. mon., 22.00' E. of W. fence line of Woodland Ave., 11.7' S. of 24" poplar tree....	816.715
59.	N. side of Mock Rd. opposite center line of Woodland Ave., B. P. in con. mon., 31' W. of E. fence line of Woodland Ave., produced, 2' S. of N. fence line of Mock Rd.....	823.583
60.	S. E. cor. of Mock Road and Parkwood Ave., B. P. in con. mon. 23.9' E. of center line of Parkwood Ave., 11.5' N. of S. property line of Mock Road (east).....	830.420
61.	N. W. cor. Hudson St. and Parkwood Ave., B. P. in con. mon., W. side of Parkwood Ave., on line of N. property line of Hudson St., 13.0' E. of con. block cor. post.....	835.572
62.	S. E. cor. Acheson and Hudson Sts., B. P. in con. mon. about on line of E. property line of Acheson St., 44.4' S. of con. block cor. post at N. E. corner	847.723
63.		
64.	N. W. cor. Greenwich Ave. and Hudson St., B. P. in con. mon., 1.3' N. of N. curb of Hudson St., 1.9' W. of end of sidewalk, 14.7' N. W. of Bell System manhole.....	856.812
65.	S. W. cor. Hudson St. and Medina Ave., B. P. in con. mon., 2.0' S. of S. curb of Hudson St., 12.5' W. of W. curb of Medina Ave. produced, 10' N. of S. W. property corner.....	864.401
66.	N. W. cor. of McGuffey and Hudson St., B. P. in con. mon., 1.9' W. of W. curb of McGuffey, 7.3' N. of N. curb of Hudson St.	857.887
67.	S. E. cor. Hiawatha Ave. and Hudson St., B. P. in con. mon., 1.7' S. of S. curb of Hudson St., 41.6' E. of E. curb of Hiawatha north produced	854.452
68.	N. E. cor. Hudson St. and Beulah Rd., B. P. in con. mon., 2.0' N. of N. curb of Hudson St., 15.6' E. of E. curb of Beulah Road	850.976
69.	S. E. corner Hudson St. and Fourth St., B. P. in con. mon., 6.0' E. of E. curb of Fourth St., 3.7' S. of S. curb of Hudson St.	851.003
70.	S. E. cor. Hudson St. and Indianola Ave., B. P. in con. mon., 12.2' E. of E. curb of Indianola Ave., 7.7' S. of S. curb of Hudson St.	845.934
71.		
72.	N. side of Hudson St., near Medary Ave., B. P. in con. mon., 2.5' N. of N. curb of Hudson St., 76.9' E. of E. curb of Medary Ave.	838.588
73.	S. W. cor. Hudson St. and High St., B. P. in con. mon., 10.2' S. of S. curb of Hudson St., 21.2' W. of bldg. line of High St., 33.0' W. of W. curb line of High St.....	797.435

DESCRIPTION OF PRECISE LEVELS

B. M. No.		Elevation
74.	S. E. cor. Hudson St. and Neil Ave., B. P. in con. mon., 9.8' S. of S. curb of Hudson St., 7.8' E. of E curb of Neil Ave....	776.967
75.	N. E. cor. Neil Ave. and Blake Ave., B. P. in con. mon., 6.6' E. of E. curb of Neil Ave., 10.5' N. of N. curb Blake Ave.....	773.519
76.	N. W. cor. Neil Ave. and Patterson Ave., B. P. in con. mon., 20.8' N. of N. curb of Patterson Ave., 5.1' W. of W. curb of Neil Ave.	758.836
77.	N. W. cor. Neil Ave. and Woodruff Ave., B. P. in con. mon., 18.5' W. of W. curb of Neil Ave., 13.8' N. of N. curb of Woodruff Ave.	745.911
78.	N. side Woodruff Ave. opposite Neil Ave., S. B. P. in con. mon., 4.9' N. of N. curb of Woodruff Ave., 16.4' W. of E. curb of Neil Ave., S. produced.....	737.149
79.	N. E. cor. of Neil Ave. and Eleventh Ave., B. P. in con. mon., 13.6' N. of N. curb of Eleventh Ave., 18.8' E. of E. curb of Neil Ave.	750.221
80.	S. W. cor. Neil Ave. and Tenth Ave., B. P. in con. mon., 3.0' S. of S. curb of Tenth Ave., 14.1' W. of W. curb of Neil Ave.	754.150
81.		
82.	N. E. cor. of Neil Ave. and Sixth Ave., B. P. in con. mon., 7.3' E. of E. curb of Neil Ave., 12.6' N. of N. curb Sixth Ave.	749.097
83.	S. W. cor. of Fifth Ave. and Neil Ave., B. P. in con. mon., 5.6' S. of S. curb of Fifth Ave., 14.8' W. of W. curb of Neil Ave.	747.482
84.	N. W. cor. Second Ave. and Neil Ave., B. P. in con. mon., 5.4' N. of N. curb of Second Ave., 16.3' W. of W. curb of Neil Ave.	740.458
85.	S. E. cor. First Ave. and Neil Ave., B. P. in con. mon., 12.8' S. of S. curb of First Ave., 16.9' E. of E. curb of Neil Ave.....	737.378
86.		
87.	N. E. cor. of Goodale and Neil Ave., B. P. in con. mon., 15.6' E. of E. curb of Neil Ave., 11.1' N. of N. curb of Goodale St	726.021
88.	N. E. cor. of Goodale St. and Dennison Ave., B. P. in con. mon., 13.7' E. of E. curb of Dennison Ave., 15.6' N. of N. curb of Goodale St.	728.900
89.	S. W. cor. of Goodale St. and Armstrong St., B. P. in stone base of brick pillar at N. E. cor. of front porch, Lenox Hotel	752.510
90.	N. E. cor. of Goodale and High St., B. P. in N. end of stone sill, entrance Park Savings Bldg., 576 N. High.....	754.704
91.	S. E. cor. of Spring and High St., B. P. in center of still of first window N. of entrance to Bank of Commerce.....	738.895
92.		
93.		
94.	E. side High St. between E. curb and future sidewalk, 100' S. of S. curb turn-in in Kenwood Ave., 2.43' E. of E. curb High St., 2.45' S. by E. of tel. pole No. 81-C-2, 3rd S. of Kenwood Ave. on E. side High St., 43.05' N. of tel. pole. 4th S. of Kenwood Ave. on E. side High St., 29.25' S. W. of S. W. cor. 24" square red brick lamp post at S. side of entrance to Columbus Oil Co. filling station.....	736.990
95.	S. W. cor. Frank Rd. and S. High St. W. of W. sidewalk	

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
High St., 11.01' W. of tel. pole No. 6225 on S. W. cor. between sidewalk and curb High St. 11.63' E. by S. of tel. pole No. 8891, 1st W. of High St. on S. side Frank Rd., 4.9' S. of S. curb line at turn into Frank Rd., 94.34' N. W. of tel. pole No. 2261, 2nd S. of Frank Rd. on W. side of High St.....	732.735
96. Frank Road and Scioto River, B. P. in S. end of W. abutment of bridge over Scioto River.....	710.533
97. N. E. cor. Jackson Pike and Frank Rd., 6.32' N. W. of tel. guy pole on N. E. cor., 49.67' N. E. of N. E. cor. 8" square con. sign post on W. side Jackson Pike opposite Frank Rd., 73.94' S. E. of hydro pole on W. side Jackson Pike in line along N. side Frank Rd., 14.52' S. W. of hydro pole 1st E. of Jackson Pike on N. side Frank Rd.....	705.819
98. E. side Jackson Pike 100' S. of bend to W. in road, 7.1' S. of tel. pole 4th S. of Frank Road on E. side of Jackson Pike. 47.2' N. of N. range line of 2-story brown frame dwelling on W. side of road. 45.03' N. E. of tel. pole No. 8917½, 7th S. of Frank Rd. on W. side Jackson Pike. 1.9' W. of E. fence line Jackson Pike.....	703.622
99. Frank Road, about 2000' W. of Jackson Pike, B. P. in N. E. wing-wall of first bridge W. of Jackson Pike.....	701.136
100. N. side of Frank Road, 1100' E. of Brown Road, about 150' N. W. of 2-F house on S. side of road, 1.5' S. of fence, 10.0' E. of tel. pole.....	726.447
101. S. side Frank Rd. opposite E. side Brown Rd., 40.85' S. of S. E. cor. con. culvert wing-wall on N. E. cor. Frank Rd. and Brown Rd., 74.36' S. E. of N. E. cor. con. culvert head-wall on N. W. cor. Frank Rd. and Brown Rd., 38.41' N. E. of N. E. cor. 24" square red brick post on W. side of entrance drive to stucco dwelling No. 811 Frank Rd., 9.58' N. by W. of 16" hydro pole S. side Frank Rd. S. end of line to N. on E. side Brown Rd.....	736.161
102. N. side Clime Rd. about 2500' W. Brown Rd., B. P. in con. mon., about 200' N. W. of 2-F house, 1.5' S. of fence, 44.1' N. E. of tel. pole No. 8952½.....	756.228
103. S. W. cor. Clime Pike and Adam Gantz Rd., B. P. in con. mon., 2.8' N. E. of the N. E. cor. of con. cor. post.....	755.909
104. N. side of Clime Pike, about 1000' E. of Harrisburg Pike, B. P. in con. mon., 16.3' N. W. of mail box post of R. A. Noble (1926), 58.5' N. E. of tel. pole No. 8969½ on S. side of road.....	759.300
105. S. W. cor. of Clime and Harrisburg Pike, B. P. in con. mon., 1.3' N. W. of tel. pole.....	762.231
106. N. W. cor. of Harrisburg Pike and Briggs Lane, B. P. in con. mon., 1.3' S. E. of fence cor., 2.1' N. E. of tel. pole.....	765.147
107. S. W. cor. of Harrisburg Pike and Briggs Rd., B. P. in con. mon., 2.2' S. W. of guy pole, 3.2' S. E. of tel. pole, 6.2' S. E. of W. guy pole.....	755.643
108. N. side of Briggs Rd. about 200' E. of first stone culvert W. of B. & O. Ry., about 100' S. E. of 2-F house, B. P. in con. mon., 15.1' S. E. of 8" Elm, 35.4' N. of S. fence of Briggs Rd.	779.844

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
109. S. side of Briggs Rd. 300' W. of stone culvert W. of B. & O. Ry., about 100' N. W. of 2-F house, B. P. in con. mon., 2.0' N. of fence, at fence running south.....	790.992
110. S. side Briggs Rd., about 1000' E. of 1st angle in road W. of Harrisburg Pike, B. P. in con. mon., 3.8' N. of 24" Elm at fence cor.	816.912
111. N. side Briggs Rd., at S. W. cor. of house lot, at first angle in road W. of Harrisburg Pike, B. P. in con. mon., 6.8' S. of fence, 24.3' W. of range of W. side of 1-F house.....	822.637
112. S. E. cor. of Briggs Rd. and Demorest Rd., B. P. in con. mon., 9.8' E. of fence cor., 2.5' N. of fence, 2.8' E. of guy pole	834.987
113. W. side Demorest Rd. about 1000' N. of Briggs Rd., B. P. in con. mon., on W. ditch bank, 3.0' E. of fence, 27.8' N. of tel. pole No. 9038-RS-2	834.823
114. N. E. cor. Sullivant Ave. and Tyler Road, B. P. in con. mon., 1.8' S. W. of lot cor., 27.7' N. W. of tel. pole.....	834.653
115. E. side of Tyler Road, about 600' N. of Sullivant Ave., B. P. in con. mon., about 60' N. of tel. pole No. 9971, 2.3' W. of E. lot line, opposite 2-F house No. 419 Tyler Road.....	835.137
116.	
117. S. E. cor. of Demorest Rd. and Broad St., B. P. in con. mon., 16.1' S. of S. curb of Broad St., 26.4' E. of E. curb Demorest Road	830.544
118. N. E. cor. Howard and Broad St., B. P. in con. mon., 2.2' N. of N. curb of Broad St., 17.7' E. of E. curb of Howard St....	824.907
119. S. E. cor. of Broad St. and Hague Ave., B. P. in top center of stone sill, under W. window of brick bldg. on S. E. cor.	795.661
120. N. W. cor. Broad St. and Ogden Ave., B. P. in con. mon., 2.9' N. of N. curb of Broad St., 53.0' W. of W. curb of Ogden Ave.	786.069
121. S. E. cor. Broad St. and Richardson Ave., B. P. in con. mon., 8.3' S. of S. curb of Broad St., and 7.0' W. of range of W. curb of Terrace Ave. N.....	779.766
122. N. E. cor. Broad St. and Wheatland Ave., B. P. in W. end of stone sill of W. door Broad St., front of No. 17 Fire Engine House	787.230
123.	
124. S. E. cor. of Broad St. and Whitethorne Ave., B. P. in top and center of stone sill under W. window Broad St. front of brick building.....	778.299
125. S. side W. Broad St., between Lechner and Belvidere Ave., B. P. in con. mon., 1.5' S. of S. curb of Broad St., 7.8' W. of range of W. side of 2-F house, No. 2021 W. Broad St.....	773.355
126. S. side W. Broad St. opposite Schultz Ave., B. P. in con. mon., 7.7' S. of S. curb of Broad St., 4.8' E. of range of E. curb of Schultz Ave. N.....	712.993
127. S. W. cor. Broad St. and Central Ave., B. P. in con. mon., 10.2' W. of W. curb of Central Ave., 7.8' S. of S. curb of Broad St.	711.632

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
128. S. E. cor. Broad St. and Central Ave., B. P. in door sill, entrance to brick bldg. (Bell Tel. Co.).....	712.251
129. N. side of W. Broad St. between Glenwood and Cypress Ave., B. P. in E. end of stone sill of center door, No. 10 Fire Engine House	712.949
130. S. E. cor. Broad & Dakota Ave., B. P. in center of second stone step of W. Broad St. Presbyterian Church.....	711.073
131. N. E. cor. Broad St. and Sandusky St., B. P. in W. end of gate sill, W. entrance to Franklinton School Yard, Broad St. side	719.949
132. N. E. cor. Broad & Skidmore St., B. P. in E. end of third step of church	719.276
133. N. side of W. Broad St., opposite Starling St., B. P. in W. end of first stone step Broad St. door of N. Y. C. Ry. freight house	713.153
134. S. side of Broad St. bridge over Scioto River, B. P. in sidewalk, 0.3' N. of stone base of first pylon W. of E. abutment..	733.837
135. W. Broad St. near W. end of Glenwood Park, B. P. in con. mon., 1.2' S. of S. curb of Broad St., 309.0' E. of E. curb of Lechner Ave.	751.926
136. W. side of Brown Rd. at Hart Rd., B. P. in con. mon., 12.7' N. of line of N. property line of Hart Rd., 2.0' E. of fence, 3.0' N. of 48" Elm	742.821
137. W. side of Brown Rd., N. of Hart Rd., B. P. in con. mon., 1.5' E. of S. E. cor. of lot, of 1-F cottage No. 1483 Brown Rd.	743.550
138. N. E. cor. Brown Rd. and Stimmel Rd., B. P. in con. mon., 4.3' S. W. of fence corner.	737.323
139. E. side of Brown Rd., about 500' N. of Stimmel Road, B. P. in N. end of N. wing of con. culvert headwall at E. fence of Cemetery	734.404
140. S. W. cor. Brown Rd. and Rosemont Ave., B. P. in con. mon., 2.6' N.E. of brick cor. post, 10.4' S.E. of 48" Oak tree	739.011
141. E. cor. Brown Rd. and Harrisburg Pike, B. P. in con. mon., 4.8' S. E. of H. T. pole, 14.0' W. of 10" evergreen tree.....	728.897
142. N. W. cor. Mound St. and Central Ave., B. P. in con. mon., 1.6' S. of cor. post, 13.8' W. of W. curb of Central Ave., 2.0' S. of range of N. curb of Mound St.....	722.735
143. S. E. cor. Central Ave. and Sullivant Ave., B. P. in E. end of stone sill under E. window of brick building.....	724.277
144. E. side Central Ave. at Penna. Ry. overhead crossing, B. P. in con. mon., 7.4' N. W. of S. W. cor. of E. abutment, 3.2' W. of abutment	712.532
145. S. E. cor. Central Ave. and McKinley Ave., B. P. in con. mon., 3.3' E. of E. curb of Central Ave., 2.7' N.E. of fire hydrant	714.464
146. S. side of McKinley Ave. at Grandview Ave., B. P. in con. mon., 9.5' W. of range of pole line on E. side of Grandview Ave., 1.8' N. of fence, 10.7' S. E. of street-light pole.....	718.974
147. Grandview Ave. bridge over Scioto River, B. P. in E. end of S. abutment, 4.4' S. W. of S. end of E. handrail.....	732.345

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
148. Grandview Ave. bridge over Scioto River, B. P. in E. end of N. abutment, 4.5' N. W. of N. end of E. hand-rail.....	731.774
149. S. W. corner Grandview Ave. and Dublin Ave., B. P. in con. mon., 5.3 N. of tel. pole No. 55-A-59.....	740.654
150. N. side Dublin Pike, W. of Grandview Ave., B. P. in con. mon., opposite house No. 1715. 122.8' E. of tel. pole No. 47-C-135, 3.3' S. of fence, 9.8' N. W. of mail post for small box	736.605
151. W. side Dublin Pike, W. of Grandview Ave., B. P. in con mon., 46.8' N. E. of guy pole No. 46-B-378, 4.5' E. of stone fence, 58.7' N. W. of N. W. cor. of 1-F shed on E. side of Dublin Pike	727.873
152. W. side of Dublin Pike, W. of Grandview Ave., B. P. in con. mon., 0.6' S. of range of S. side of 1-F house No. 2347 Dublin Pike, 24.0' E. of above house.....	733.899
153. W. side of Dublin Pike, at Cardington Road, B. P. in con. mon., 43.6' W. of stone fence on E. side of pike, 20.5' N. of range of stone fence on N. side of Cardington Road, 21.2' S. of guy-pole No. 46-B-404.....	744.585
154.	
155.	
156. N. E. cor. Fifth Ave. and Dublin Pike, B. P. in con. mon., 3.4' N. of N. curb of Fifth Ave., 8.7' S. W. of Sycamore tree, 54.4' N. of tel. pole No. 38073 on S. E. cor.....	743.981
157. W. Fifth Ave. and first road E. of Penna. Ry. crossing, B. P. in con. mon., at N. E. cor., 6.5' N. of N. curb of Fifth Ave., 7.3' N. W. of the W. side of two tel. poles.....	772.113
158. N. W. cor. W. Fifth Ave. and Roxbury Rd., B. P. in con. mon., 10.7' N. of N. curb of Fifth Ave., 13.7' W. of W. curb of Roxbury Rd.	799.912
159. N. E. cor. W. Fifth Ave. and Arlington Ave., B. P. in con. mon., 10.1' N. of N. curb of Fifth Ave., 15.6' E. of E. curb of Arlington Ave.	813.292
160. N. E. cor. W. Fifth Ave. and Cappella Ave., B. P. in con. mon., 10.8' N. of N. curb of Fifth Ave., 10.7' E. of E. curb of Cappella Avenue	813.692
161. N. E. cor. W. Fifth Ave. and North Star Ave., B. P. in con. mon., 10.0' N. of N. curb of Fifth Ave., 2.1' S. of W. side of brick light post of filling station.....	805.824
162. N. W. cor. W. Fifth Ave. and Meadow Rd., B. P. in con. mon., 4.4' N. of N. curb Fifth Ave., 32' S. E. of 10" Hedge Apple tree in N. edge of sidewalk.....	777.191
163. N. W. cor. Fifth Ave. and Nectar Ave. between sidewalk and curb Fifth Ave., B. P. in con. mon., 2.0' N. of N. curb of Fifth Ave., 18.5' W. of W. curb-turn of Nectar Ave.....	760.934
164. S. W. cor. W. Fifth Ave. and Edgehill Rd., B. P. in con. mon., 10.4' S. of S. curb of Fifth Ave., 13.0' W. of W. curb return of Edgehill Rd.	737.444
165. S. E. cor. W. Fifth Ave. and Col.-Del. Pike, 3.2' S. of S. curb of Fifth Ave., 3.6' E. of curb return of Col.-Del. Pike.....	732.723

DESCRIPTION OF PRECISE LEVELS

B. M. No.		Elevation
166.	N. W. cor. W. Fifth Ave. and Highland St., B. P. in con. mon., 11.2' N. of N. curb of Fifth Ave., 6.8' W. of W. curb of Highland St.....	758.327
167.	N. W. cor. Fifth Ave. and High St., B. P. in stone sill, High St. front, Fifth Ave. Savings Bank.....	758.375
168.	N. W. cor. Fifth Ave. and Summit St., B. P. in con. mon., 11.6' N. of N. curb Fifth Ave., 1.0' E. of range of E. end of 2-B flat on N. W. cor.	769.951
169.	S. E. cor. Fifth Ave. and Fourth St., B. P. in con. mon., in sidewalk, 9.3' S. of S. curb of Fifth Ave., 6.3' E. of E. curb Fourth St.	768.163
170.	S. W. cor. Fifth Ave. and Cleveland Ave., B. P. in con. mon., 9.5' W. of W. curb of Cleveland Ave., 5.5' S. of S. curb of Fifth Ave.....	801.872
171.	N. E. cor. E. Fifth Ave. and Walters Ave., B. P. in con. mon., 0.7' E. of E. edge of walk on Walters, 0.4' N. of N. edge of walk on Fifth Ave.....	815.867
172.	N. E. cor. E. Fifth Ave. and St. Clair Ave., B. P. in con. mon., 5.6' N. of N. curb Fifth Ave., 14.2' E. of E. curb St. Clair Ave.	827.739
173.	S. W. cor. E. Fifth Ave. and Joyce Ave., B. P. in con. mon., 5.3' N. W. of guy pole, 5.1' S. of tel. pole.....	836.691
174.	S. E. cor. E. Fifth Ave. and Bassett St., B. P. in con. mon., 0.9' N. of fence cor., 7.3' E. of E. curb of Bassett St., 6.7' S. of S. curb turn of Fifth Ave.....	821.324
175.	N. W. cor. Cleveland Ave. and Essex Ave., 8.6' W. of W. curb of Cleveland Ave., 13.2' N. E. of E. curb of Essex Ave., 11.6' S. W. of tel. pole on W. side of Cleveland Ave., B. P. in con. mon.....	808.770
176.		
177.	Cleveland Ave. opposite 14th Ave., 8.6' E. of E. curb of Cleveland Ave., 4' N. of range of N. curb of 14th Ave. W., 3.9' S. of S. side of walk, entrance to No. 1580 Cleveland Ave., B. P. in con. mon.....	841.911
178.	S. E. cor. Cleveland Ave. and 17th Ave., 2.0' S. of S. curb of 17th Ave., 8.7' E. of E. curb of Cleveland Ave., 11.7' N. E. of guy pole. B. P. in con. mon.....	848.795
179.	N. E. cor. Cleveland Ave. and 21st Ave., B. P. in con. mon., 6.0' E. of E. curb of Cleveland Ave., 8.6' N. of N. curb return of 21st Ave., 3.8' S. W. of property cor.....	855.857
180.	S. E. cor. Cleveland Ave. and 25th Ave., B. P. in con. mon., 5.9' E. of E. curb of Cleveland Ave., 4.2' S. of S. curb of 25th Ave., 7.9' N. W. of stone prop. cor.....	855.282
181.	S. E. cor. Hudson St. and Cleveland Ave., B. P. in con. mon., 8.5' E. of E. curb of Cleveland Ave., 9.7' S. of S. curb of Hudson St., 13.5' N. E. of tel. pole.....	856.450
182.	S. E. cor. Cleveland Ave. and Genessee Ave., B. P. in con. mon., 3.4' E. of E. curb of Cleveland Ave., 8.5' S. of S. curb of Genessee Ave., 5.8' W. of property cor.....	863.510
183.	N. E. cor. Cleveland Ave. and Westerville Road, B. P. in con. mon., 8.5' E. of E. curb of Cleveland Ave., 9.9' N. W.	

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
of curb return of Westerville Pike, 1.7' S. of range of S. side of 2-B building No. 2639 Cleveland Ave.....	863.213
184. S. E. cor. Cleveland Ave. and Agler Rd., B. P. in con. mon., 9.0' E. of E. curb of Cleveland Ave., 8.7' S. of S. curb return of Agler Rd., 1.7' N. W. of property corner.....	869.374
185. S. W. cor. Cleveland Ave. and Oakland Park Ave., B. P. in con. mon., 9.8' W. of W. curb of Cleveland Ave., 8.0' S. of S. curb return of Oakland Park Ave., 2.0' N. of property corner.....	875.152
186. S. E. cor. Cleveland Ave., and Long Road, B. P. in con. mon., 4.7' E. of E. curb of Cleveland Ave., 2.3' S. of S. curb return of Long Road, 17.2' N. of tel. pole. 19.2' N. W. of 24" twin tree.....	874.495
187. W. side of Cleveland Ave., 33.4' N. of 6th tel. pole N. of Long Rd., 3.2' W. of W. curb of Cleveland Ave., 9.4' E. of W. fence. B. P. in con. mon.....	876.924
188. N. W. cor. Cleveland Ave. and Lamont St., B. P. in con. mon., 3.5' W. of W. curb of Cleveland Ave., 9.6' N. of N. curb return of Lamont St., 6.8' N. of line of row of Catalpa trees on N. side of Lamont St.....	880.930
189. E. side Cleveland Ave. opposite center line of Pegg Road, W., B. P. in con. mon., 2.9' E. of E. curb of Cleveland Ave., 26.6' S. of line of S. curb return of Pegg Road East.....	878.355
190. E. side Cleveland Ave. between Pegg Rd. and Morse Rd., B. P. in con. mon. S. of Drive to No. 3932 Cleveland Ave., 3.7' E. of E. curb of Cleveland Ave., 14.0' S. of range of S. side of above house, 27.6' N. E. of 15" Locust tree.....	872.598
191. S. W. cor. Cleveland Ave. and Lehner Rd., B. P. in con. mon., 7.6' E. and 1.7' N. of brick cor. post, 2.8' W. of W. curb of Cleveland Ave.	873.493
192. W. side of Cleveland Ave., 3.5' N. W. of 6th tel. pole N. of Nottingham Rd., B. P. in con. mon., 5.1' E. of W. fence of Cleveland Ave., 17.9' N. of range of N. side of 2-B house, No. 4281 Cleveland Ave.....	876.112
193. S. W. cor. Cleveland Ave. and Morse Rd., B. P. in con. mon., 3.4' W. of W. curb Cleveland Ave., 9.4' S. of S. curb return of Morse Rd., 2.9' N. W. of tel. pole.....	876.848
194. Morse Road W. of Cleveland Ave., B. P. in con. mon. mid-way between No. 2241 and 2191 Morse Road, in bottom of ditch on N. side of Morse Rd., 6' N. and 2' east of leaning tel. pole 2.5' S. of fence.....	884.116
195. N. side Morse Rd. between Cleveland Ave. and Karl Rd., B. P. in con. mon., 2.9' S. W. of S. W. cor. of No. 4 School Yard, 31.5' W. and 36.4' S. of range of school tower.....	890.935
196. N. side of Morse Rd., 2.0' W. of line of E. fence line of Karl Rd., B. P. in con. mon. in bottom of ditch, 3.7 S. of fence....	900.661
197. N. W. cor. Morse Rd. and Hess Free Pike, B. P. in con. mon., 1.9' N. E. of N. E. cor. of headwall of culvert, 9.9' E. of tel. pole, 2.5' S. of line of N. fence line of Morse Rd.....	900.790
198. N. side of Morse Rd. opposite E. side of Sharon & Clinton Pike, 1.5' S. of fence, 10.0' N. and 1.0' E. of guy pole, B. P.	

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
in con. mon.	893.543
199. S. side Morse Rd. W. of Sharon and Clinton Pike midway between tel. poles Nos. 10-B-22 and 10-B-23 in ditch 1.3' N. of fence, 24.2' W. of fence corner, con. mon.	894.808
200. N. side of Morse Rd. opposite Otter St., B. P. in con. mon., 1.1' S. of fence, 38.6' N. of Fire Hyd., 76.5' E. of E. end of headwall of con. culvert.	871.470
201. N. side Morse Rd. opposite Lion St., B. P. in con. mon., 1.2' S. of fence, 37.8' N. of fire hyd., 24.4' N. E. of center of man-hole in Morse Road	874.005
202. S. W. cor. Morse Rd. and Elk St., B. P. in con. mon., 6.5' S. of Fire Hydrant, 12.7' N. W. of property cor., 28.5' E. of 6" poplar	848.107
203. N. side of Morse Rd., opposite Armadillo St., B. P. in con. mon., 7.0' E. of E. side of yard walk, 42.0' S. of 2-F house, No. 202 Morse Road.	836.659
204. S. W. cor. N. High St. and Sharon Ave., B. P. in con. mon., 3.4' W. of W. curb of High St., 7.6' S. of S. curb return of Sharon Ave., 10.0' S. E. and 21.8' N. E. of two elm trees.	807.652
205.	
206. W. side of N. High St., opposite Dominion Rd., B. P. in con. mon., 12.6' W. of W. curb of High St., 3.0' N. of range of N. curb of Dominion Rd. E.	810.954
207. N. W. cor. N. High St. and Henderson Rd., B. P. in con. mon., 11.7' W. of W. curb of High St., 12.8' S. W. of fire hydrant, 16.3' S. of 30" Maple tree.	804.676
208. S. E. cor. N. High St. and Blenheim Rd., B. P. in con. mon., 7.6' E. of E. curb of High St., 13.7' S. of S. curb of Blenheim Rd. (paved 20')	774.740
209. S. E. cor. N. High St. and Acton Rd., 19.9' E. of E. curb of High St., 13.5' S. of S. curb of Acton Rd. (paved 20'), B. P. in con. mon.	777.724
210. S. E. cor. N. High St. and Torrence Rd., B. P. in con. mon., 14.5' E. of E. curb of High St., 5.8' S. of S. curb of Torrence Road	783.194
211. S. E. cor. N. High St. and Oakland Park Ave., B. P. in con. mon., 3.6' E. of E. curb of High St., 20.8' S. of S. curb of Oakland Park Ave.	782.190
212. N. W. cor. of Oakland Park Ave. and Forest Ave., B. P. in con. mon., 1.0' N. of N. curb of Oakland Park Ave., 13.1' W. of W. curb return of Forest Ave., (turned 15') 9.3' E. of tel. pole No. 160287.	858.086
213. S. W. cor. of Oakland Park Ave. and Indianola Ave., B. P. in con. mon., 1.6' N. of N. edge of concrete sidewalk, 13.7' N. W. of end of curb return, Indianola Ave., 39.0' S. of fire hydrant on N. side of Oakland Park Ave., 8.5' N. of property corner	859.303
214. S. W. cor. Oakland Park Ave. and Beulah Rd., B. P. in con. mon., 6.5' N. of property cor., 80.1' W. of range of W. side and 32.0' N. of range of N. side of 2-story frame house on S. E. corner.	865.271

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
215. N. E. cor. Oakland Park Ave. and Maize Pike, B. P. in con. mon., 4.0' S. E. of property cor., 59.5' E. of range of E. side of 2-story frame house on N. W. cor., 81.0' N. of range of N. side of 1-story frame house on S. side of Oakland Park Ave.	871.948
216. S. W. cor. Oakland Park Ave. and McGuffey Rd., B. P. in con. mon., 20.0' N. of range of E. side of 2-story frame house on S. W. cor., 59.0' E. of range of E. side of above house.....	879.938
217. N. E. cor. Oakland Park Ave. and Karl Rd., B. P. in con. mon., 2.7' S. of property cor., 75.3' E. of range of E. side and 59.7' S. of range of S. side of 1½-story frame house on N. W. corner.....	884.178
218. S. W. cor. Oakland Park Ave. and Medina Ave., B. P. in con. mon., 10.0' N. of property cor., 44.7' E. of range of E. side and 107.1' S. of range of S. side of 2-story frame house on N. side of Oakland Park Ave.....	875.770
219. Oakland Park Ave. between Medina Ave. and Cleveland Ave., B. P. in con. mon., N. side of road, 2.1' S. of fence, on line of E. side of and 55.9' S. of 2-story frame house 1734	879.055
220. W. side of Sharon-Clinton (Maize) Pike, N. of Oakland Park Ave., B. P. in con. mon., 9.1' N. of range of N. side of 2-F house No. 3355, 4.0' E. of hedge, 6.0' S. E. of 6" Cherry tree	871.836
221. N. E. cor. Sharon-Clinton (Maize) Pike and Northridge Rd., B. P. in con. mon., 11.0' W. and 1.0' S. of property cor., 43.5' E. of W. fence line.....	880.420
222. E. side Sharon-Clinton (Maize) Pike, between the 6th and 7th tel. poles N. of Northridge Rd., B. P. in con. mon., on line of N. side 2-F house No. 3818, 54.1' W. of above house	880.426
223. S. E. cor. Sharon-Clinton Pike and Cook Rd., 2.2' N. of and 5.8' W. of fence cor., 19.7' N. and 2.2' W. of tel. pole, B. P. in con. mon.....	885.129
224. E. side Sharon-Clinton Pike, N. of Cook Rd., 4.9' S. and 1.2' W. of S. W. cor. of headwall of first culvert N. of Cook Rd., B. P. in con. mon.....	884.157
225.	
226. N. W. cor. Weber Rd. and Indianola Ave., B. P. in con. mon., 2.3' N. of N. curb of Weber Rd., 7.2' W. of W. edge of cement walk on Indianola Ave., 24.5' S. E. and 13.5' S. W. of two brick pillars of filling station.....	855.152
227. S. E. cor. Arlington Ave. and Waltham Rd., B. P. in con. mon., 8.7' S. of S. curb of Waltham and 28.8' E. of E. curb of Arlington Ave.	828.542
228. N. W. cor. Waltham Road and Coventry Road, B. P. in con. mon., 8.4' N. of N. curb of Waltham Road, 26.5' W. of W. curb return of Coventry Road (turned 20').....	830.791
229. N. W. cor. Lane Ave. and Tremont Rd., B. P. in con. mon., 2.0' E. and 9.3' S. of stone fence cor., 15.5' N. W. of tel. pole No. 6641.....	831.432
230. W. side Worthington and Georgesville Rd. opposite Wilshire Rd., B. P. in con. mon., on line of row of tel. poles N. 27.6' S. of guy pole, 28.2' S. E. of I. P. near fence run'g W.	840.596

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
231. W. side Worthington and Georgesville Rd. opposite first Rd. running E. S. of Zollinger Pike W., 2.0' E. of fence, 21.0' S. of 30" Maple, 15.2' N. of fence running W., 12.0' N. W. of mail box post (H. Richards).....	855.301
232. E. side Worthington and Georgesville Pike, opposite center line of Zollinger Pike W., B. P. in con. mon., 1.5' N. of fence line E., 3.1' W. of fence, 22.1' N. and 2.0' W. of 12" Maple (N. one of four).....	860.917
233. S. W. cor. Worthington and Georgesville Pike, and Olentangy Free Pike, B. P. in con. mon., 41.0' S. of S. side of con. culvert on N. side of road, 36.21' E. of range of E. side of 2-F house on N. W. cor., 48.5' N. W. of 30" Elm on E. side of W. & G. Pike.....	853.060
234. E. side Worthington and Georgesville Pike, 4.2' N. and 0.6' W. of N. W. cor. of E. headwall of first stone culvert N. of Olentangy Free Pike, B. P. in con. mon., on line of fence E., 7.0' W. of E. fence.....	845.279
235. S. W. cor. Worthington and Georgesville Pike and Kennedy Pike, B. P. in con. mon., 2.0' E. of W. fence line of Kennedy Pike, 3.5' S. of S. fence line W. & G. Pike, 37.7' W. of tel. pole, 3.1' S. of guy pole.....	827.277
236. W. side of Kennedy Free Pike, N. of Olentangy Free Pike W., just N. of entrance drive to residence of B. P. Whip (1926), 3.0' W. of con. curb on Kennedy Pike, 9.0' N. of curb on N. side of drive, 13.2' E. of 24" Poplar tree, B. P. in con. mon.	810.271
237. E. side Kennedy Free Pike, opposite Olentangy Free Pike W., 3.0' S. of range of N. line of Olentangy Pike E., 3.3' N. and 6.4' E. of N. E. cor. of headwall of con. culvert, B. P. in con. mon.	802.464
238. S. E. cor. Kennedy Free Pike and Olentangy Free Pike E., B. P. in con. mon., 1.0' N. of line of S. fence line of Olentangy Pike E. and on line of E. fence line of Kennedy Pike N., 3.2' N. W. of 12" corner post.....	777.785
239. E. side of Col. & Del. Free Pike opposite Olentangy River Free Pike, B. P. in con. mon., 15.5' S. of line of N. fence line of Olentangy River Free Pike, 3.3' W. of cemetery fence, 17.0' N. of N. side of entrance to cemetery.....	740.398
240. W. side Col. & Del. Pike, opposite end of Dodridge St., 18.6' S. and 1.2' E. of S. E. cor. of stone headwall of culvert, 35.0' N. of 36" maple tree, B. P. in con. mon.....	734.585
241. N. W. cor. Dodridge St. and Neil Ave., B. P. in con. mon., 7.1' W. of W. curb of Neil Ave., 6.9' N. of N. curb of Dodridge St., 5.9' N. E. of fire hydrant.....	766.005
242. N. E. cor. Kennedy Pike and first road S. of Olentangy Free Pike E., B. P. in con. mon., 4.8' E. of E. fence line of Kennedy Pike, 1.9' S. of line of N. fence line of road E. 4.9' W. of tel. pole No. 7728.....	773.323
243. N. E. cor. Hess Rd. and Kennedy Pike, B. P. in con. mon., 2.1' S. W. of N. E. cor., 51.3' N of range of N. side of 1-B house on W. side of road, 41.9' E. of range of E. side of	

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
brick pillar on W. side of road.....	773.142
244. S. W. cor. Kennedy Pike and Lane Ave., B. P. in top of headwall of con. culvert.....	760.513
245. Hocking Valley Ry. and Lane Ave., B. P. in con. mon., between main tracks, 38' N. of N. prop. line Lane Ave.....	756.945
246. W. side of Hocking Valley Ry., about 260' S. of Lane Ave. crossing, B. P. in con. mon., 4.4' W. of W. right of way, 1.0' above ground (1926), 59.8' S. of range of S. side of 1-B bldg. (about 100' W. of Ry.).....	755.615
247. Kinnear Road and Hocking Valley Ry., B. P. in con. mon., 2.0' N. of S. fence line of Kinnear Rd., 33.5' E. of W. right of way, 14.2' W. of W. gauge of W. main track.....	745.716
248. Flenniken Pike and Hocking Valley Ry., B. P. in con. mon., between main tracks, on line of S. property line Flenniken Pike, 50.2' S. of range of S. side of 1-B bldg. on N. side of Flenniken Pike	739.356
249. King Ave. and Hocking Valley Ry., B. P. in con. mon., between main tracks, 15.6' S. of line of S. curb line of King Ave., (E. of H. V. Ry.), 19.8' W. of range of W. side of 3-B building	737.452
250. E. side of Dublin Pike, B. P. in top of S. end of E. headwall of first culvert S. of Cambridge Blvd. on Dublin Pike..	752.275
251. Marble Cliff bridge over Scioto River, B. P. in E. end of S. side of bridge, 1.1' S. of S. curb of bridge, 0.9' W. of E. end of bridge curb	759.414
252. N. E. cor. Dublin Pike and Lane Ave., B. P. in con. mon., 7.6' E. of tel. pole, 30.5' S. of 10" tree in old stone fence line	790.808
253. N. W. cor. Wilson Road & Broad St., B. P. in con. mon., 3.5' E. and 1.7' S. of cor. of hedge, 8.6' S. of tel. pole No. 6876, 41.0' S. W. of 48" Elm.....	839.186
254. S. E. cor. Wilson Road and Haldy Road, B. P. in S. end of E. headwall of con. culvert.....	831.430
255. Wilson Road, B. P. in top of N. E. wing wall, of first culvert N. of Pennsylvania Ry.....	834.118
256. E. side of Wilson Road, B. P. in S. E. wing wall of third con. culvert N. of Penna. Ry. crossing, 0.4' S. of S. end of E. headwall	837.827
257. E. side of Wilson Road, B. P. in S. E. wing wall of first culvert in Wilson Road N. of Brookside Road, 0.9' S. E. of S. E. cor. of E. headwall.....	834.801
258. E. side of Wilson Road, B. P. in S. end of E. wall of first culvert S. of Trabue Pike.....	845.150
259. Wilson Road and Trabue Pike, B. P. in con. mon., N. side of Trabue Pike, opposite W. fence line of Wilson Road, 2.0' S. of fence, 28.5' W. & 3.0' S. of 12" tree.....	849.340
260. Trabue Pike, B. P. in S. W. wing wall of first culvert E. of Wilson Road	827.572
261. Trabue Pike and Williams Road, B. P. in con. mon., N. side of road, 1.5' W. of line of E. fence of Williams Rd., 1.2' S. of fence, 20.7' W. of range of W. side of 1-F house on N. side of Trabue Pike, 2.5' N. E. of guy pole.....	831.850

DESCRIPTION OF PRECISE LEVELS

B. M. No.		Elevation
262.	S. W. cor. Trabue Pike & Marble Cliff Road, B. P. in N. end of door sill of store	802.623
263.	S. side of W. end of Williams bridge over Scioto River, B. P. in sidewalk	768.007
264.	W. side of Olentangy Free Pike about 1200' N. of Kennedy Pike, B. P. in con. mon., 5.7' E. of W. fence, 159.5' S. of S. end of rail of con. culvert	806.389
265.	N. W. cor. Olentangy Free Pike and Township Road, B. P. in con. mon., at roadside edge of ditch bank, 2.7' E. of line of W. fence (S. of Township Rd.) 36.5' W. and 18.5' S. of tel. pole No. 6532	849.037
266.	W. side Olentangy Free Pike, about 1000' N. of Township Road, B. P. in con. mon., 9.8' E. of W. fence of Olentangy Free Pike, 6.3' S. of range of S. side of 2-F house, 7.5' S. and 36.0' W. of tel. pole No. 6523	858.541
267.	W. side of Olentangy Free Pike about 600' S. of Henderson Rd., at N. side of entrance to old 1F house, 23.0' S. of 24" Maple, 2.6' E. of W. fence line of Olentangy Free Pike	848.484
268.	N. E. cor. Olentangy Free Pike and Henderson Rd., B. P. in con. mon., 1.6' S. of fence, 19.0' W. of range of front of 1½-B house	847.068
269.	S. side of Henderson Rd. between 6th and 7th tel. pole W. of Col. and Del. Pike, B. P. in con. mon., 2' S. of S. edge of pavement, 10.2' N. of fence line, 34.3' S. of 10" forked tree, 47.6' W. of 6th tel. pole	768.521
270.	N. W. cor. Col. and Del. Pike and Henderson Rd., B. P. in con. mon., at edge of macadam roadway, 1.7' W. of line of W. fence Col. and Del. Pike, 1.6' N. of range of N. rail of bridge over Olentangy River	745.397
271.	Henderson Road bridge over Olentangy River, B. P. in E. end of N. sidewalk	751.117
272.	S. E. cor. Henderson Rd. and Olentangy Blvd., B. P. in con. mon., 4.4' E. of line of E. curb of Olentangy Blvd. N., 45.7' S. of fire hydrant	751.217
273.	S. W. cor. Henderson Rd. and Zellar Road, B. P. in con. mon., on line of W. curb of Zellar Rd., 35.9' S. of line of S. face of park circle in Zellar Rd.	783.701
274.	S. E. cor. Agler Rd. and CCC highway, B. P. in con. mon., 1.8' S. of S. curb of Agler Rd. (paved 24'), 32.0' W. of W. curb turn of Joye Ave. (turned 36')	862.489
275.	S. W. cor. Agler Rd. and Purdue Ave., B. P. in con. mon., 1.72' S. of S. curb of Agler Rd., 13.0' W. of W. curb return of Purdue Ave.	849.129
276.	Agler Rd. and Woodland Ave., B. P. in con. mon., N. side of road opposite center line of Woodland Ave., 2.3' N. of N. curb of Agler Rd., 10.0' W. of line of E. curb return of Woodland Ave.	842.167
277.	Agler Road, about half way between Woodland Ave. and Sumbury Pike at angle in Agler Rd., B. P. in con. mon., 1.8' S. of S. curb of Agler (paved 24'), 112.5' E. of range of E. side of two-story con. block and frame garage-dwelling on	

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
S. side of road.....	810.651
278. Agler Road bridge over Alum Creek, B. P. in S. side, at W. end of bridge.....	795.947
279. Agler Road and Sunbury Pike, B. P. in con. mon., E. side of Sunbury Pike, on line with N. handrail of bridge, 45.8' S. E. of N. E. cor. of N. E. wing wall of bridge.....	808.940
280. W. side of Sunbury Pike, opposite Peter Agler road, 14.0' E. of W. fence line of Sunbury Pike, 62.8' S. of range of S. side of 2-B house No. 2472 Sunbury Pike, B. P. in con. mon.	799.278
281. N. W. cor. Mock Road and Sunbury Pike, B. P. in con. mon., 21.2' W. of line of W. edge of bridge paving 1.0' S. of guard fence. 33.8' S. W. of S. W. cor. of steelwork of bridge.....	767.605
282. E. side Sunbury Pike about 500' S. of Mock Rd., 8.3' W. of E. fence of Sunbury Pike, 147.5' N. of N. side of drive to farm on E. side Sunbury Pike. B. P. in con. mon., 8.3' W. of 24" tree in E. fence line, 19.0' N. W. of tel. pole.....	765.530
283. S. W. cor. Sunbury Pike and Holt Ave., B. P. in con. mon., 3.4' N. of S. fence line of Holt Ave., 56.9' S. of N. fence line Holt Ave., 53.7' W. of W. porch of house No. 1478 Sunbury Pike	806.681
284. E. side Sunbury Pike, about 800' S. of Holt Ave., B. P. in con. con., 14.0' W. of E. fence line of Sunbury Pike, 22.3' S. of range of S. side of house No. 1258 on E. side Sunbury Pike	806.376
285. S. side of Mock Road, about 200' W. of Sunbury Pike, 5.7' N. of S. fence line, 1.5' S. of S. edge of road, 39.8' W. of range of W. side of 1-story brick smoke house on S. side of Mock Rd., B. P. in con. mon.....	766.528
286. N. side Mock Rd. at second turn W. of Sunbury Pike, B. P. in con. mon., 9.8' S. of N. fence line of Mock Road, 18.0' E. of range of E. side of 2-story frame house No. 2450 Mock Rd.	770.640
287. S. side Mock Rd. at top of first hill W. of Sunbury Pike, B. P. in con. mon., 9.0' N. of S. fence line of Mock Road, 187.5' W. of range of W. side of 2-story frame house on S. side of Mock Road at top of hill, 2.5' S. of traveled part of roadway	806.425
288. N. side Mock Rd. W. of B. M. 287. B. P. in con. mon., 31.4' N. of S. fence line of Mock Rd., 120.0' E. of range of E. side side of 2-story brick house on S. side of Mock Rd., 0.7' N. of N. edge of road.....	814.566
289. S. side Mock Rd., opposite Woodland Ave. N., B. P. in con. mon., 67.0' E. of range of E. side of 1½-story frame house on S. side Mock Rd., 40.5' S. of N. fence line of Mock Rd. (W. of Woodland, N.).....	820.863
290. S. E. cor. High St. and Arcadia Ave., B. P. in window sill of ear barn	782.423
291. S. E. cor. High St. and Tulane Road, B. P. in con. base of gasoline pump of filling station (Scarlet & Gray Oil Co.)....	776.846
292. S. E. cor. High St. and Como Ave., B. P. in stone step, entrance to No. 3246 N. High St.,	777.504

DESCRIPTION OF PRECISE LEVELS

B. M. No.	Elevation
293. S. W. cor. Reeb Ave. and S. Fourth St. inside of sidewalk lines. 6.0' W. of W. curb Fourth St., 6.85' S. W. of N. W. cor. of catch basin in curb on S. W. cor., 4.25' E. of N. E. cor. bottom step of con. entrance walk to No. 71 Reeb Ave.	740.897
294. S. E. cor. High St. and Reeb Ave., B. P. in con. mon., 12.7' E. of E. curb of High St., (paved 60'), 9.5' S. of S. curb of Reeb Ave. (paved 30').....	750.183



ERRATA

Coordinates, Bearings and Distances of Traverse

Pt. No.	Coordinates		Course		Bearing
	No.	E	From	To	
1/1	121118.381	99506.885			
1/3					
1/24			1/24	1/25	
4/15	121004.941				
7/4			7/4	7/5	N 17 42 55
7/5			7/5	7/6	N 22 02 11
7/51			7/51	7/52	N 89 24 40
8/7			8/7	8/8	N 02 52 30 11
11/8			11/8	11/9	N 86 46 31.2 V
11/12					
11/14			11/14	11/15	S 89 26 10.0 W
14/1	109251.678	91896.382			
16/1					
16/26	94560.404	119856.088	16/26	7/40	
21/19					
21/20					
22/15					
22/21		114531.932	22 21	22 22	
22/35			22 35	22 36	
23/10					
24/22	83673.293	75695.224			

DESCRIPTIONS OF TRAVERSE STATIONS

- 20/3 B. M. (instead of Ford axle).
- 20/4 B. M. (instead of Ford axle).
- 21/1 B. M., E. monument of Eastern Base Transfer.
- 21/8 B. M. (instead of Ford axle).
- 21/9 B. M. (instead of Ford axle).
- 24 16 B. M.
- 24 17 B. M.
- 24/53 B. M. 140 (instead of B. M. 53).

DESCRIPTION OF PRECISE LEVELS

B. M. No.

- 8 Elevation 798.824.
- 14 6.7' N. of range of N. side of house No. 522 Bulen Ave.
- 62 Joyce Ave. (instead of Atchison).
- 137 Elevation 743.350.

NOTE: On account of numerical arrangement of Traverse and Bench Marks, no Index for Part II is included.



Due

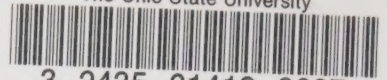
Date Due

APR 1			
APR 2			
APR 3			
APR 4			
APR 5			
APR 6			
APR 7			
APR 8			
APR 9			
APR 10			
APR 11			
APR 12			
APR 13			
APR 14			
APR 15			
APR 16			
APR 17			
APR 18			
APR 19			
APR 20			
APR 21			
APR 22			
APR 23			
APR 24			
APR 25			
APR 26			
APR 27			
APR 28			
APR 29			
MAY 1			
MAY 2			
MAY 3			
MAY 4			
MAY 5			
MAY 6			
MAY 7			
MAY 8			
MAY 9			
MAY 10			
MAY 11			
MAY 12			
MAY 13			
MAY 14			
MAY 15			
MAY 16			
MAY 17			
MAY 18			
MAY 19			
MAY 20			
MAY 21			
MAY 22			
MAY 23			
MAY 24			
MAY 25			
MAY 26			
MAY 27			
MAY 28			
MAY 29			
MAY 30			
MAY 31			

Due

Date Due

The Ohio State University



3 2435 01412 0687

TD25C72A5

001

REPORT OF THE GEODETIC AND TOPOGRAPHIC S

THE OHIO STATE UNIVERSITY BOOK DEPOSITORY



D	AISLE	SECT	SHLF	SIDE	POS	ITEM	C
8	03	30	17	7	15	001	2